

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MB 1,8 i 1

1. Edition

En

PES 4 A 50 D 410 RS 1010 X RSV 250-950 A 4 B 60 L
Komb.-Nr. 0 400 474 158

supersedes
company Daimler-Benz
engine OM 636

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{1,7-1,8}{(1,65-1,85)}$ mm (from BDC) RW=9,0-12,0 mm - Zyl. 4

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
930	12,4+0,1	2,3-2,4	0,2(0,25)			
250	9,4-9,6	0,8-1,4	0,2(0,25)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 26	250	9,0	930	12,4-12,5
	X = 5,5						250	9,4-9,6	300	13,6-14,2
ca. 59	11,4	970-990					470-530	2,0		
2a	4,0	1065-1095								
	1150	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to) rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5		rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
930	22,5-23,5 (21,5-24,5)	970-990*	-	-		-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

A1

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MB 1,8 r 4

2. Edition

En

PES 4 A 50 D 410 RS 1025 RSV 650-1200 A 5 B 729 L
Komb.-Nr. 0 400 474 154 A 5 C 729 L
0 400 474 155

superseded 4.83
company Daimler-Benz
engine OM 636
34 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65-1,85) mm (from BDC) RW 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1180	13,6+0,1	2,9 - 3,0	0,2(0,25)			
650	9,9-10,1	1,1 - 1,2	0,15(0,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control lever deflection in degrees 7			3 Torque control Control rod travel mm	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	mm 11
loose	1000	0,3-1,0	-	-	-	ca. 34	650	9,5	1180	13,6-13,7
	x = 4,5						100	min.19,5	400	14,5-15,1
ca. 57	12,6	1220-1230					650	9,9-10,1	500	13,6-13,8
2a	4,0	1365-1395					865-925	= 2,0		
	1450	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		rev/min 8	
1180	29,0 - 30,0 (28,0 - 31,0)	1220-1230*	-	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

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WPP 001/4 SOA 2,8 a

1. Edition

En

PES 3 A 80 D 410/3 RS 1183 RSV 325-1075 A 8 B 492-1 L
Komb.-Nr. 0 400 463 104

superseded
company Sonacome
engine F 3 L 912

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

1,9-2,0
Port closing at prestroke (1,85-2,05) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1075	11,0±0,1	5,0-5,1	0,2 (0,35)			
325	8,4-8,6	1,0-1,6	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control rev/min mm	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	Control rod travel mm 11
loose	800 0,3-1,0 x = 5,5		-	-	-	ca. 22	325 5,5		1075	11,0-11,1
ca. 54	10,0 1115-1125 4,0 1155-1185 1335 0,3-1,7						325 5,9-6,1 410-470 = 2,0		500 12,0-12,1 935 11,4-11,6	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational-speed limit Note changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop rev/min 8		Control rod travel mm 9
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7				
1075	50,0-51,0 (48,5-52,5)	1115-1125*	-	-	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 SOA 3,7 a
2. Edition

En

PES 4 A 80 D 410/3 RS 1183

RSV 325-1150 A 8 B 493-1 L

supersedes 9.84

Komb.-Nr. 0 400 464 095

company Sonacome
engine F 4 L 912

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $1,9-2,0$
($1,85-2,05$) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	10,6+0,1	5,0-5,1	0,2(0,35)			
325	9,3-9,5	1,7-2,3	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,	-	-	-	ca. 17	325	8,9	1150	10,6-10,7
	x = 3,5						100	min. 19,5	450	11,6-11,7
ca. 51	9,6	1190-1200					325	9,3-9,5	900	11,0-11,3
2a	4,0	1245-1275					480-540	= 2,0		
	1350	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to) rev/min							
rev/min	cm ³ /1000 strokes			rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1150	50,0-51,0 (48,5-52,5)	1190-1200*	-	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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A4

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 SOA 3,7 a 1

2. Edition

En

PES 4 A 75 D 410/3 RS 1183
Komb.-Nr. 0 400 464 104

RSV 325-1400 A 8 B 742 - 1L

supersede 9.84

company Sonacome

engine F 4 L 912

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,85 - 2,05) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre tensioning (torque control valve) mm
1	2	3	4	2	3	6
1400	11,0+0,1	5,5-5,6	0,2(0,35)			
325	7,9-8,1	0,7-1,3	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 22	325	7,5	1440	11,0-11,1
	X = 5,75								500	12,0-12,1
ca. 69	10,0	1440-1450					325	7,9 - 8,1	885	11,4-11,6
2a	4,0	1525-1555					640 -	700 = 2,0		
	1700	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop		6 Rotational speed limit		3a Fuel delivery characteristics		5 Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to							
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1400	55,0-56,0 (53,5-57,5)	1440-1450*		800	50,0-52,0 (48,5-53,5)	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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A5

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MWM 3,9 b

1. Edition

En

PES 4 A 80 D 320 RS 1282

RS 350/1500 A 2 B 2073-1 R

supersedes

company MWM

engine D 229-4

Komb.-Nr. 9 407 083 285

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,15-2,25$
($2,10-2,30$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1480	9,0-9,1	5,4-5,5	0,25(0,4)			
350	5,9-6,1	0,6-0,9	0,2(0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	FHca.34	350	6,0	1480	9,0-9,1
	X =						300	6,6-7,2	500	10,2-10,3
VHca.59	8,0	15 40-1550					400	4,8-5,6	800	10,0-10,3
FH voll	4,0	1570-1600					550	max. 3,5	1000	9,6-9,8
2a	1700	0,3-1,7					1350	max. 2,6		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit Note: changed to) rev/min 3	3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)			rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
rev/min 1	cm ³ /1000 strokes 2							
1480	54,0-55,0 (52,5-56,5)	1540-1550*	800	54,5-56,5 (52,5-58,5)	100	19,0-21,0 mm RW	-	-
500	52,0-54,0 (50,0-56,0)		1000	55,0-57,0 (53,0-59,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 1 g 11

2. Edition

En

PES 4 A 80 D 410/3 RS 1300 RSV 325-1150 A 8 C 2163 - 2 L supersede 9.84

Komb.-Nr. 0 400 464 130

company KHD
engine F 4 L 912
51 kW/2300 min⁻¹
Schlepper DX 4,10

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 - 2,0
(1,85-2,05) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1175	10,8+0,1	5,2 - 5,3	0,25 (0,4)			
325	8,6-8,8	1,0 - 1,6	0,2 (0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 21	325	8,2	1175	10,8-10,9
	x =	3,25							500	12,0-12,1
ca. 57	9,8	1215-1225					325	8,6-8,8		
	4,0	1275-1305					460-520	= 2,0		
2a	1400	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp 40° C (104° F)		Note changed to rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1175	52,0 - 53,0 (50,5 - 54,5)	1215-1225*	800	51,5 - 53,5 (49,5 - 55,5)	100	115,0-125 (112,0-128,0) =19,5-21,0 mm RV	0 - (0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 1 g 10

3. Edition

En

PES 2 A 80 D 310/3 RS 1322 RSV 325-1150 A 8 B 2011-1 L
Komb.-Nr. 0 400 462 054

superseded 10.84
KHD
company F 2 L 912
engine 25 kW bei 2300 min⁻¹
Schlepper D 3607-
S 33

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,85-2,05) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
1150	11,1+0,1	5,9-6,0	0,25(0,4)			
325	8,9-9,1	1,2-1,8	0,2(0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 26	325	8,5	1150	11,1-11,2
	x = 6,0								500	12,0-12,1
ca. 60	10,1	1190-1200					325	8,9-9,1	1010	11,5-11,7
2a	4,0	1320-1350					690-750	2,0		
	1480	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop		(6) Rotational-speed limit		(3a) Fuel delivery characteristics		Starting fuel delivery		(5)		(4a) Idle stop	
Test oil temp 40°C (104°F)		Note changed to)				Idle				Control rod travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm		
1	2	3	4	5	6	7	8	9			
1150	59,0- 60,0 (57,5- 61,5)	1190-1200*	750	57,0-59,0 (55,0-61,0)				-	-		

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

Test oil ISO 4113

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 1 g 14

2. Edition

En

PES 3 A 80 D 410/3 RS 1324

RSV 325-1075 A 8 C 2163-1 L

Komb.-Nr. 0 400 463 147

supersedes 10.84

KHD

company F 3 L 912

engine 34 kW/2150 min⁻¹

Schlepper DX 3,10

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9-2,0
(1,85-2,05) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
800	11,6+0,1	5,1-5,2	0,25 (0,35)			
325	8,5-8,7	1,0-1,6	0,2 (0,3)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 17	325	8,1	800	11,6-11,7
	x = 4,0								500	11,6-11,7
ca. 50	9,7	1115-1125					100	min. 19,5	900	11,4-11,6
	4,0	1155-1185					325	8,5-8,7	1075	10,8-11,0
2a	1320	0,3-1,4					480-540	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to) rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	rev/min 7	cm ³ /1000 strokes 8	rev/min 9	Control rod travel mm 10
800	51,0-52,0 (49,5-53,5)	1115-1125*	-	-	100	115,0-125,0 (112,0-128,0) = 19,5-21,0 mm RW	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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A9

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 1 g 13

2. Edition

En

PES 3 A 80 D 410/3 RS 1324

RSV 325-1250 A 8 C 2168-1 L

Komb.-Nr. 0 400 463 148

superse 10.84

company KHD

engine F 3 L 912

45 kW/2500 min⁻¹

Schlepper DX 3,30

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9-2,0
(1,85-2,05) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
1250	10,7+0,1	5,6-5,7	0,25(0,35)			
325	7,4-7,6	1,0-1,6	0,2 (0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Lower rated speed Control lever deflection in degrees rev/min 7 8 9			3 Torque control rev/min mm 10 11	
Control rod travel mm 2	Control rod travel mm rev/min 3									
loose	800 0,3-0,7 x = 4,0		-	-	-	ca. 19	325	7,9	1250	10,7-10,8
ca. 57	9,7 1290-1300 4,0 1330-1360 1565 0,3-1,4						325 425-485	8,3-8,5 = 2,0	500 1090	11,3-11,4 10,9-11,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational speed limit Note: changed to) rev/min 3		3a Fuel delivery characteristics rev/min cm ³ /1000 strokes 4 5		Starting fuel delivery Idle rev/min cm ³ /1000 strokes 6 7		4a Idle stop rev/min Control rod travel mm 8 9	
1250	55,5-56,5 (54,0-58,0)	1290-1300*	800	48,5-50,5 (46,5-52,5)		100	115,0-125,0 (112,0-128,0) =19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

5.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 16,0 h

1. Edition

En

PE 10 A 90 D 520/5 LS 2362 RQV 750 AB 985 R
Komb.-Nr. 0 400 649 179

supersedes
company MAN
engine D 25 30 ME

1- 8- 7-6 - 3 - 5 - 2 - 10- 9 - 4
0-27-72-99-144-171-216-243-288-315° ± 0,5 ° (± 0,75 °)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{1,5-1,6}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
725	12,6+0,1	11,1-11,2	0,3 (0,45)			
200	6,4-6,6	1,2-1,8	0,2 (0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 29	11,6 4,0	745-755 765,-785	-	-	-	-	-	-	-	-
						3a				

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
725	110,5-111,5 (108,5-113,5)	745-755 *	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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A11

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 6,1b1

3. Edition

En

PES6A85D 410/3 RS2366

EP/RS 325/1325 AOB 691 DL

AOC 691 DL

Komb.-Nr. 0 400 866 057

supersedes 1.85

company KHD

engine BF6L913

88 kW/2650 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1,9-2,0

Port closing at prestroke

(1,85-2,05)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque control valve) mm
1	2	3	4	2	3	6
1325	11,4±0,1	7,6-7,7	0,3(0,45)			
200	8,9-9,1	1,6-2,2	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	VH ca. 65	325	6,0	1325	11,4-11,5
	X = 7,0					FH ca. 30	400	2,7-3,7	500	12,1-12,2
VH ca. 65	10,4	1355-1365					800	2,7-2,9	1060	11,7-11,8
FH max	4,0	1450-1480					1300	2,0-2,2		
2a	1630	0 - 1,0					1400	0 - 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to) rev/min							
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2		4			6	7	8	9
LDA 1325	0 bar 76,0-77,0 (74,0-79,0)	1355-1365	LDA 500	0 bar 44,0-47,0 (42,0-49,0)		100	118,5-128,5 (115,5-131,5) = 18,0 - 18,4 mm H ₇		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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4.85

A12

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

KHD 6,1 b 1 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 A.. RS 2366 + RS ..AOB 691 DL AOC 691 DL	0,70	0 0,34 0,15	13,4-13,5 11,4-11,5 13,0-13,1 11,9-12,1

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 6,1 b 2

1. Edition

En

PES 6 A 85 D 410/3 RS 2366

EP/RS 325/1325 AOB 709 DL
AOC 709 DL

supersedes

company

engine

KHD

BF 6 L 913

88 kW/2650 min⁻¹

Komb.-Nr. 0 400 866 063

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,85-2,05)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
1325	11,4+0,1	7,6-7,7	0,3(0,45)			
200	8,9-9,1	1,6-2,2	0,3(0,05)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	VH ca.66	325	6,0	850	11,9-12,1
	X = 7,0					FH ca.30	400	2,7-3,7	500	11,9-12,1
VH ca.66	10,4	1355-1365					800	2,7-2,9		
FH max.	4,0	1450-1480					1300	2,0-2,2		
2a	1630	0-1,0					1400	0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to .) rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 1325	0,5 bar 76,0-77,0 (74,0-79,0)	1355-1365*	LDA 500	0 bar 44,0-47,0 (42,0-49,0)	100	118,5-128,5 =18,0-18,4 mm RW	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

KHD 6,1 b 2

- 2 -

Test at n = 700 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 A..RS 2366 +EP/RS..AOB 709 DL AOC 709 DL	0,50	0,38 0,10	11,4-11,5 11,1-11,2 9,4- 9,8

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VMA 18,6 a

1. Edition

En

PES 10 A 90 D 410 IS 2374 RSV 250-750 A 1 B 623 L
Komb.-Nr. 0 400 879 102

supersedes=
company Motori VM
engine V 130/10

1-10- 9- 4- 3 - 6 - 5 - 8 - 7 - 2
0-27-72-99-144-171-216-243-288-315 ° ± 0,5 ° (± 0,75 °)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,25-3,45) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
750	10,5±0,1	8,5 - 8,6	0,3			
250	6,6-6,8	1,0-1,6	0,25			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 18	250	6,2	750	10,5-10,6
	x = 4,0						100	min. 19,5	450	10,5-10,7
ca. 46	9,5	790-800					250	6,6-6,8	300	11,8-12,4
2a	4,0	800-830					365-425	= 2,0		
	965	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp 40°C (104°F)		Note: changed to .) rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min 1	cm ³ /1000 strokes 2	3		4	5	6	7	8	9
750	85,0-86,0	790-800 *	-	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 KHD 9,6 p

En

1. Edition

PES 6 A 95 D 410 RS 2416

RQ 750 AB 1199 L

Komb.-Nr. 0 400 846 534

supersedes -

company KHD

engine BF 6 L 413 FRT
112 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $1,75-1,85$
 $(1,70-1,90)$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
710	11,8±0,1	12,8 - 13,0	0,35(0,6)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9 rev/min 10		Torque control rev/min 11 Control rod travel mm 12	
-	-	-	-	10,6 3,5	750-755 781-791	-	-	-	-	-	-

Torque-control travel
on flyweight assembly dimension a = - mmSpeed regulation: At $750-755 \text{ min}^{-1}$ 1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
710	127,5 - 129,5 (125,5 - 131,5)	-	-	-	-	100	115,0 - 125,0 (112,0 - 128,0) = 13,2 - 13,4 mm RW

Checking values in brackets

4.85

Testoil-ISO 4113

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 9,6 k

3. Edition

PES 6 A 95 D 410 RS 2416

RSV 325-1100 A 8 B 2040 L
A 8 C 2040 L

Komb.-Nr. 0 400 876 279

supersedes 5.84

company KHD

engine BF6L413 FR
Schlepper DX 230₁
147 kW/2200 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,75-1,85
(1,70-1,90) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,6+0,1	11,2-11,4	0,3 (0,6)			
325	5,4-5,6	0,9-1,5	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 16	325	5,5	1100	10,6-10,7
	X = 4,0						100	min. 19,0	550	10,6-10,8
ca. 49	9,6	1140-1150					325	5,9-6,1	375	11,8-12,4
2a	3,7	1165-1195					440-500	= 2,0		
	1330	0,3-1,7					600	max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to .)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1100	0,5 bar 111,5-113,5 (109,5-115,5)	1140-1150*		LDA 900	0,5 bar 114,0-117,0 (112,0-119,0)	100	120,0-130,0 = 13,4 - 14,0 mm RW	0 -	-
				LDA 500	0 bar 77,5-80,5 (75,5-82,5)				

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

A18

D. Adjustment Test for Manifold Pressure Compensator

KHD 9,6 K

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES6A..RS2416 + RSV..A8B 2040L	0,50	0,36 0,25 0	10,6-10,7 10,3-10,4 9,6-9,9 9,5-9,6

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 8,8 a 2

2. Edition

En

PES 4 A 95 D 410 RS 2424
Komb.-Nr. 0 400 074 216

RSV 300-900 A7B 616 DL
A7C 616 DL

supersedes 11.82
company TAM
engine F4L413R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,75,1,85
(1,70-1,90) mm (from BD) = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
900	8,8-8,9	7,6-7,8	0,3 (0,6)			
300	5,9-6,1	0,7-1,3	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 27	300	5,5	900	8,8-8,9
	X = 5,5									
ca. 58	7,8	940-950					100	min. 19,0	600	9,4-9,6
	4,0	945-975					300	5,9-6,1	400	9,8-9,9
2a	100	0,3-1,7					435-495	= 2,0		
							600	max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational speed limit Note changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop rev/min 8		Control rod travel mm 9
900	cm ³ /1000 strokes 2	940-950*	-	-	-	100	cm ³ /1000 strokes 7	115,0-125,0 - (112,0-128,0) = 12,5 - 13,1 mm	-	-
	(73,5-79,5)									

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

A20

Test Specifications Fuel Injection Pumps ② and Governors

PES 5 A 95 D 410 LS 2426 RQ 250/1150 AB 839 L

Komb.-Nr. 0 400 845 012

1 - 3 - 5 - 4 - 2 je $72^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

supersedes 1.82

company MAN

engine D 2555 MX/MXF
141 kW/2300 min⁻¹
MAN-Nr. 1-7618

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{1,3-1,4}
(1,25-1,45) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,2+0,1	11,5 - 11,7	0,3(0,6)			
250	6,4-6,6	0,9 - 1,5	0,2(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,3	600	16,0	10,3 4,0	1195-1210 1255-1285	250	6,5	100 250 370-410=2,0	min.7,9 6,4-6,6 110=2,0	1150 600 935 1015	11,2-11,3 11,6-11,7 11,4-11,6 11,2-11,5

Torque-control travel
on flyweight assembly dimension a = mmSpeed regulation: At 1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1150	114,5-116,5 (112,5-118,5)	250		800	115,0-118,0 (113,0-120,0)	100	146,5-156,5
				500	max. 116,5 (max. 118,5)		

Checking values in brackets

①

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 KHD 12,7 h

2. Edition

En

Testoil-ISO 4113

 PE 8 A 95 D 410 LS 2451 RQV 300-1250 AB 1085 L
 Komb.-Nr. 0 400 648 123

 1 - 8 - 7 - 2 - 6 - 5 - 4 - 3
 0 -45 -90 -135-180-225-270-315 $\pm 0,5^\circ (\pm 0,75^\circ)$

superseded 02

company KHD

 engine F 8 L 413 F
 188 kW (256PS)₁
 bei 2500 min

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke (1,95-2,15)
 2,00-2,10 mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1250	10,3+0,	9,2 - 9,4	0,3(0,6)			
300	7,1-7,3	1,8 - 2,4	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1250	15,2-17,8	-	-	-	ca.12	100	min.8,7	300	0,7-0,9
							300	7,1-7,3	650	4,6-4,8
							455-515 = 2,0		1290	8,4
ca.64	9,3	1290-1300								
	4,0	1370-1400								
	1500	0 - 1,0								

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1250	91,5 - 93,5 (89,5 - 95,5)	1290-1300*	1000	91,5 - 94,5 (89,5 - 96,5)	100	20,0 - 130,0 (17,0 - 133,0)	1250	10,3-10,4
			700	91,0 - 94,0 (89,0 - 96,0)			700	10,7-10,8
							400	10,7-10,8
							925	10,5+0,2
					100-220 (80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 15,8 h

2. Edition

En

Testoil-ISO 4113

PE 10 A 95 D 610/4 LS 2452 RQV 300-1250 AB 1129 L

Kombi-Motor 0 400 619 223

1 - 10- 9 - 4 - 3 - 6 - 5 - 8 - 7 - 2

0 - 27-72 -99 -144-171-216-243-288-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes 02

comp. KHD

engine F 10 L 413 F

228 kW (310 PS)
bei 2500 min

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,0 - 2,1$ mm (from BDC)
(1,95 - 2,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,3 \pm 0,1	9,1 - 9,3	0,3(0,6)			
300	6,4-6,6	1,2 - 1,6	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1380	15,2-17,8	-	-	-	ca. 18	100 300	min.8,0 6,4-6,6	300 500 1000 1300 1500	1,2-1,3 1,6-2,9 5,4-5,6 7,7-7,8 8,7
ca.51	9,3 4,0 1500	1290-1300 1375-1405 0 - 1,0				3a				

Torque control travel a = 0,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed ②b limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery ⑥ Idle switching point		Torque-control ⑤ travel Control rod travel mm	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
1250	90,5 - 92,5 (88,5 - 94,5)	1290-1300 *	1000	90,5 - 93,5 (88,5 - 95,5)	100	120,0 - 130,0 (117,0-133,0)	1250	10,3±0,1
			800	93,5-96,5 (91,5-98,5)			500	10,5±0,1
							940	10,4±0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

A23

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 19,0 n 1

2. Edition

En

PE 12 A 95 D 610 LS 2453 RQV 1150 AB 996 L
Komb.-Nr. 0 400 640 096

supersedes 1.85

company KHD

engine F 12 L 413 F

1- 4- 9- 8- 5 - 2 - 11- 10- 3 - 6 - 7 - 12
0-15-60-75-120-135-180-195-240-255-300-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,0-2,1
(1,95-2,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1110	10,2+0,1	8,9-9,1	0,35(0,6)			
	6					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever mm 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever mm 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever mm 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 26	9,2 4,0	1150-1155 1175-1190	-	-	-	-	-	-	1050 1100 1150 1200 1220	0,5-0,9 2,7-3,1 5,5-5,8 9,0-9,1 10,5

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (4a)		Fuel delivery characteristics high idle speed (5b)		Starting fuel delivery Idle switching point (6)		Torque-control travel Control rod travel mm (5)	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5		6	7	8	9
1110	88,5-90,5 (86,5-92,5)	1150-1155*	-	-		-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 KHD 6,1e1

5. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 RS 2471 RSV 325-1150A 8 B 674 DL
Komb.-Nr. 0 400 876 275 A 8 C 674 DL

supersedes 6.83

company: KHD

engine: BF 6 L 913 C
132 kW/2300 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,85-2,05)
1,90±2,00 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	11,8+0,1	10,8 - 11,0	0,3(0,6)			
325	7,2-7,4	1,6 - 2,2	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.15	325	6,8	500	11,8+0,1
	x =	4,75					100	min. 19		
⑤ 55	1190-1200=10,8						325	7,2-7,4		
	1235-1265= 4,0						615-675=2,0			
	1400=0,3-1,7									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2			4	5	6	7	8	9
LDA 1150	0,7 bar 108,0-110,0 (106,0-112,0)	1190-1200*		LDA 850	0,7 bar 102,5-105,5 (100,5-107,5) LDA 0 bar 62,0-64,0 (59,5-66,5)	100	120,0-130,0 (117,0-133,0 = 15,9 - 16,4 mm RW	325	6,8

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

KHD 6,1 e 1 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	diminution difference mm (1)
2471 + 674 DL	0,7 bar		11,8 - 11,9
		0	10,6 - 10,7
		0,27	11,6 - 11,7
		0,1	10,8 - 11,0

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

/

. 10

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 6,1 e

8. Edition

En

PES 6 A 95 D 410 RS 2471 RSV 325-1150 A 8 B 707 DL
A 8 C 707 DL

Komb.-Nr. 0 400 876 274

superseded 3.84
KHD
company
engine BF6L 913 C
132 kW
Einbau 2300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 - 2,0
(1,85-2,05) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,8+0,1	10,8-11,0	0,3(0,6)			
325	7,1-7,3	0,9-1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Lower rated speed Control lever deflection in degrees rev/min 7 8 9			3 Torque control rev/min mm 10 11	
loose ca. 55 2a	Control rod travel mm	Control rod travel mm rev/min	-	-	-	ca. 21	325	6,7	1150	11,8-11,9
	x = 4,75						100	min. 19,0	500	11,8-12,0
	10,8	1190-1200					325	7,1-7,3		
	4,0	1235-1265					590-650	= 2,0		
	1400	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational speed limit Note changed to) rev/min 3		3a Fuel delivery characteristics rev/min cm ³ /1000 strokes 4 5		Starting fuel delivery Idle rev/min cm ³ /1000 strokes 6 7		4a Idle stop rev/min Control rod travel mm 8 9	
LDA 1150	0,7 bar 108,0-110,0 (106,0-112,0)	1190-1200*		LDA 850	0,7 bar 102,5-105,5 (100,0-108,0)	100	125,0-135,0 (122,0-138,0) = 15,5 - 15,8 mmRW	-	-
				LDA 500	0 bar 62,0-64,0 (59,5-66,5)				

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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B3

Test Oil ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

KHD 6,1 e - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 A..RS 2471 + RSV..A 8 B707DL A 3 C707DI	0,70	0,37 0,09 0	11,8-11,9 11,5-11,6 10,1-10,3 9,9-10,1

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 9,2 e

6. Edition

En

PES 5 A 95 D 410 LS 2488
Komb.-Nr. 0 400 845 029

ROV 250-1100 AB 850 DL

supersedes 5.84

company MAN

engine D2565 M/MF
141 kW/2200 min⁻¹
MAN-Nr. 1-7726

1-3-5-4-2 je 72° ±0,5° (±0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{1,5-1,6}
(1,45-1,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,2+0,1	11,8-12,0	0,3(0,6)			
250	5,7-5,9	1,1-1,7	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1140	14,4-17,6	-	-	-	ca. 13	100	min. 1,3	200	0,7-0,9
ca. 42	10,2	1140-1150					250	5,7-5,9	500	3,5-3,8
	4,0	1165-1195					315-375	2,0	800	5,0-5,4
	1300	0 - 1,0					450 max.	1,0	100	7,7

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	cm ³ /1000 strokes 4	rev/min 5	cm ³ /1000 strokes 6	rev/min 7	cm ³ /1000 strokes 8	rev/min 9	Control rod travel mm 10
1100	117,5-119,5 (115,5-121,5)	1140-1150*	800	116,5-120,5 (114,5-122,5) max. 116,5 (max. 118,5)	100	15,5-16,5 mm RW	1100	11,2+0,1	
			500		250	6,0 mm RW	800	11,2+0,3	
							500	11,3+0,2	

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 16,0 c 7

1. Edition

En

PE 10 A 95 D 520/5 LS 2501 RQ 250/1150 AB 1171 R

Komb.-Nr. 0 400 649 229

1- 8- 7- 6- 3- 5- 2- 10- 9- 4

0-27-72-99-144-171-216-243-288-315 ° ± 0,5 ° (± 0,75 °)

supersedes

company MAN

engine D 2530 MTXF

265 KW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,65-1,85)

mm (from BDC) γ 1. 10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,4+0,1	11,8-12,0	0,3 (0,6)			
250	5,9-6,1	1,5-2,1	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
600	19,2-20,8	600	20,0	10,4	1195-1210	250	6,0	100	min. 7,5	1150	11,4-11,5
VH = max. 46 °				4,5	1270-1300			250	5,9-6,1	600	11,9-12,0
								330-370	= 2,0	855	11,7-11,9
										920	11,4-11,7

Torque-control travel
on flyweight assembly dimension a = 0,20 mmSpeed regulation: At 1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
LDA 1150	0,5 bar 117,5-119,5 (115,5-121,5)	-		LDA 750	0,5 bar 119,5-122,5 (117,5-124,5)	100	166,5-176,5 (163,5-179,5)
				LDA 500	0 bar 76,5-79,5 (74,5-81,5)	250	6,5mm RW

Checking values in brackets

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D. Adjustment Test for Manifold Pressure Compensator

MAN 15,0 c 7 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 10 A.. LS2501 + RQ .. AB 1171 R	0,70	0,35 0,24 0	11,9-12,0 11,6-11,7 10,7-11,0 10,1-10,2

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 16,0 c 8

1. Edition

En

PE 10 A 95 D 520/5 LS 2501 RQ 250/1250 AB 1171-1 R
Komb.-Nr. 0 400 649 230

supersedes
company
engine
MAN
D 2530 MTE
295 kW

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4
0 -27 -72 -99 -144-171-216-243 -288-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65-1,85) mm (from BDC) Zyl. 10; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,7+0,1	12,9-13,1	0,35(0,6)			
250	6,4-6,6	1,0-1,6	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	Test specifications rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	19,2-20,8	600	20,0	11,7	1295-1310	250	6,5	100	min.8,0	-	-
VH=max. 46°				4,5	1355-1385			250	6,4-6,6		
								340-380	= 2,0		
								450	max.1,0		

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation: At

1295-1310 min⁻¹
1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
LDA 1250	0,7 bar 128,5-130,5 (126,5-132,5)			LDA 750	0,5 bar 122,5-125,5 (120,5-127,5)	100	166,5-176,5 (163,5-179,5)
				LDA 500	0 bar 76,5-79,5 (74,5-81,5)		=18,2-18,8 mm RW

Checking values in brackets

Testoil-ISO 4113

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D. Adjustment Test for Manifold Pressure Compensator

MAN 16,0 c 8

- 2 -

Test at n = 1250 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 10 A..LS 2501 +RQ..AB 1171-1 R	0.70	0 0,37 0,24	12,7-12,8 10,2-10,3 12,4-12,5 11,2-11,5

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 16,0 c 9

1. Edition

En

PE 10 A 95 D 520/5 LS 2501 RQV 250-1150 AB 1179 R
Komb.-Nr. 0 400 649 234

supersedes
company MAN
engine:

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4
0 -27 -72 -99 -144-171-216-243 -288-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65-1,85) mm (from BDC) Zyl. 10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,0+0,1	12,9-13,1	0,3(0,6)			
250	5,9-6,1	1,5-2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1200	15,2-17,8	-	-	-	ca. 12	100 250 320-380=2,0	min.7,5 5,9-6,1 2,0	200 600 1050 1250	0,7-0,9 4,1-4,4 6,7-7,2 9,7
ca. 46	11,0 4,0 1400	1190-1200 1240-1270 0-1,0				③a				

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b)	Fuel delivery characteristics high idle speed (5b)		Starting fuel delivery Idle switching point (5)		Torque-control travel (5)	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3 (4a)	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	128,5-130,5 (126,5-132,5)	1190-1200*	500	124,0-127,0 (122,0-129,0)	100	15,7-16,3 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 16,0 c 10

1. Edition

En

PE 10 A 95 D 520/5 LS 2501 RQV 250-1250 AB 1180 R
Komb.-Nr. 0 400 649 235

supersedes-
company: MAN
engine

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4
0 -27 -72 -99 -144-171-216-243 -288-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65-1,85) mm (from BDC) Zyl. 10; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,3+0,1	12,3-12,5	0,3(0,6)			
250	5,9-6,1	1,5-2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1290	15,2-17,8	-	-	-	ca. 12	100	min.7,5	200	0,7-0,9
ca. 47	11,5 4,5 1500	1290-1300 1365-1395 0-1,0					250	5,9-6,1	600	4,1-4,4
							320-380	2,0	100	6,6-7,1
							500	max.1,0	375	9,8

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1250	0,7 bar 123,0-125,0 (121,0-127,0)	1290-1300*	LDA 750	0,7 bar 119,5-122,5 (117,5-124,5)	100	170,0-180,0 (167,0-183,0)	-	-
			LDA 500	0 bar 76,5-79,5 (74,5-81,5)	250	7,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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B11

D. Adjustment Test for Manifold Pressure Compensator

MAN 16,0 c 10

- 2 -

Test at n = 1250 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	diminution difference mm (1)
PE 10 A... 2501 +RQV...AB 1180 R	0,70	0,39 0,28 0	12,3-12,4 11,6-11,9 10,5-10,7 10,0-10,1

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 16,0 c 11

1. Edition

En

PE 10 A 95 D 520/5 LS 2501 RQV 250-1150 AB 1180 - 1R
Komb.-Nr. 0 400 649 236

supersedes

company: MAN

engine:

1-8-7-6-3-5-2-10-9-4

0-27-72-99-144-171-216-243-288-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke 1,7-1,8
(1,65-1,85) mm (from BDC) γ 1. 10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,7+0,1	11,9-12,1	0,3 (0,6)			
250	5,9-6,1	1,5-2,1	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed				Intermediate rated speed				Lower rated speed			Sliding sleeve travel			
Degree of deflection of control lever	rev/min	Control rod travel mm	1a	Degree of deflection of control lever	rev/min	Control rod travel mm	4	Degree of deflection of control lever	rev/min	Control rod travel mm	3	rev/min	mm	1
1	2	3	2a	4	5	6		7	8	9		10	11	
max.	1190	15,2-17,8		-	-	-		ca. 12	100	min. 7,5		200	0,7-0,9	
ca. 46	10,7	1190-1200						3a	250	5,9-6,1		600	4,1-4,4	
	4,0	1235-1265							320-380	2,0		1050	6,7-7,2	
	1400	0 - 1,0							450 max.	1,0		1250	9,8	

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	4a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1150	0,7 bar 118,5-120,5 (116,5-122,5)	1190-1200 *		LDA 750	0,7 bar 118,5-121,5 (116,5-123,5)	100	16,7-17,3 mm RW	1150	1,7+0,1
				LDA 500	0 bar 78,0-81,0 (76,0-83,0)			500	2,1+0,1
								870	1,9-0,2
								1020	11,7+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

MAN 16,0 c 11 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 10 A..LS2501 + RQV..AB 1180-1 R	0,70	0,33 0,26 0	11,7-11,8 11,5-11,6 10,5-10,8 9,9-10,0

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps and Governors

① WPP 001/4 MAN 16,0 c 12

1. Edition

En

PE 10 A 95 D 520/5 LS 2501 RQV 250-1150 AB 1181 R

Komb.-Nr. 0 400 649 237

1- 8- 7-6 - 3 - 5 - 2 - 10- 9 - 4

0-27-72-99-144-171-216-243-288-315° ± 0,5 ° (± 0,75 °)

supersedes -

company: MAN

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Testoil-ISO 4113

Port closing at prestroke 1,7-1,8 (1,65-1,85) mm (from BDC) Zyl. 10						
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,0+0,1	12,5-12,7	0,3 (0,6)			
250	5,9-6,1	0,9-1,5	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 12	100	min. 7,5	200	0,7-0,9
ca. 46	11,0	1190-1200					250	5,9-6,1	600	4,1-4,4
	4,0	1240-1270					320-380=2,0		1050	6,7-7,2
	1400	0 - 1,0							1250	9,7

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics (5a) high idle speed (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5)	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1150	0,7 bar 124,5-126,5 (122,5-128,5)	1190-1200 *	LDA 750	0,7 bar 124,5-127,5 (122,5-129,5)	100	170,0-180,0 (167,0-183,0)	1150 500 875 1025	12,0+0,1 12,4+0,1 12,2+0,2 12,0+0,3
			LDA 500	0 bar 77,5-80,5 (75,5-82,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MAN 16,0 c 12 - 2 -

Pump/governor	Setting	Measurement	Control rod travel ⁽¹⁾ diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm
PE 10 A..LS2501 + RQV..AB 1181 R	0,70	0,35 0,26 0	12,6-12,7 11,4-11,5 10,3-10,6 9,9-10,0

Notes.

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 12,8 f 1

1. Edition

En

PE 8 A 90 D 320 LS 2514 RQV 250-1250 AB 1184 R

Komb.-Nr. 0 400 648 135

1-8-7-2-6-3-5-4 je 45 ° ± 0,5 ° (± 0,75 °)

supersedes...

company: MAN

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{1,5-1,6}
(1,45-1,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	11,5+0,1	10,3-10,4	0,3(0,45)			
250	6,9-7,1	0,9-1,5	0,25(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1290	15,2-17,8	-	-	-	ca. 13	100	min. 8,4	200	0,7-0,9
ca. 46	10,5	1290-1300					250	6,9-7,1	450	2,9-3,5
	4,0	1350-1380					340-400	= 2,0	550	3,9-4,2
	1500	0 - 1,0					450 max.	1,0	950	5,6-6,0
									1350	9,4

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	102,5-103,5 (100,5-105,5)	1290-1300*	800	96,0-99,0 (94,0-101,0)	100	133,0-143,0 (130,0-146,0)	1250	11,5+0,1
			500	max. 94,0 (max. 96,0)	250	= 18,0-18,6 mm RW 7,0 mm RW	500	11,9+0,1
							810	11,8+0,1
							1035	11,5+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2
3.85

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②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,1p14

4. Edition

tropicalized version

En

PES 6 A 95 D 410 LS 2542

RQ 250/1100 AB 965 DL

Komb.-Nr. 0 400 846 424

supersedes 1.85

company: MAN

0 400 846 486

engine:

D2566 M/MF (1)

177 kW (240 PS)

MAN-Nr. 2-7283

D2566 MF-Tropen

168 kW/1500 min

(2)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5-1,6

(1,45-1,65)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1100	12,0+0,1	12,5-12,7	0,3(0,6)			
250	6,0-6,2	1,1 - 1,7	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	11,0	1145-1160	250	6,1	100	min. 7,6	-	-
				4,0	1185-1215			250	6,0-6,2		
				1300	0- 1,0			360-420	= 2,0		
								500	max. 1,0		

Torque-control travel
on flyweight assembly dimension a =

0

mm

Speed regulation: At 1145-1160 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes/mm
1	2	3	4	5	6	7
(1) 1100	124,5-126,5 (122,5-128,5)	-	750	110,5-113,5 (108,0-116,0)	100	121,5-131,5 (118,5-134,5) = 14,0 - 14,6 mm RW
			500	max. 113,5 (max. 116,0)		

Checking values in brackets

4.85

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B. Governor Settings

MAN 11,1 p 14

- 2 -

Checking of slider PRG check		Full load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	11,0 4,0 1300	1145-1160 1185-1215 0-1,0	250	6,1	100 250 360 500	min. 7,6 6,0-6,2 =2,0 max.1,0	-	-

Torque-control travel on flyweight assembly dimension a = - mm Speed regulation At 1145 - 1160 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	
(2) 1100	118,0 - 120,0 (116,0 - 122,0)		500 750	102,0 - 108,0 (100,0 - 110,0) 106,0 - 109,0 (104,0 - 111,0)	100 250	125,0 - 135,0 (120,0 - 140,0) 9,0 - 15,0 (6,5 - 17,5)	

Checking values in brackets

B. Governor Settings

Checking of slider PRG check		Full load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12

Torque-control travel on flyweight assembly dimension a = mm Speed regulation At 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	

En Checking values in brackets

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

tropicalized version

WPP 001/4 MAN 11,1 p 21

En 1. Edition

PES 6 A 95 D 410 LS 2542
Komb.-Nr. 0 400 846 504

RQ 250/1000 AB 1137-2 L

supersedes

company MAN

engine D 2566 M (1)
177 kW/1500 min⁻¹
MAN-Nr. 2-7409
D 2566 M-Tropen⁻¹
168 kW/1500 min⁻¹
(2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5-1,6
(1,45-1,65) mm (from BDC) Zyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,1	12,5 - 12,7	0,3(0,6)			
250	6,5-6,7	0,8 - 1,4	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
600	15,6-16,4	600	16,0	11,0	1145-1160 4,0 1195-1225	250	6,0	100 min.7,5 250 5,9-6,1 370-410 =2,0		-	-

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1145 - 1160 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
(1) 1100	124,5 - 126,5 (122,5 - 128,5)	-		500	107,5 - 113,5 (105,5 - 116,5)	100	121,5 - 131,5 (118,5 - 134,5) = 14,4 - 15,0 mm RW 6,6 mm RW
				750	113,0 - 116,0 (110,5 - 118,5)	250	

Checking values in brackets

4.85

B20

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B. Governor Settings

MAN 11,1 p 21

- 2 -

Checking of slider PRG check		Full load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6 - 16,4	600	16,0	11,0 4,0	1145-1160 1195-1225	250	6,0	100 250 370-410	min. 7,5 5,9- 6,1 = 2,0	-	-

Torque control travel on flyweight assembly dimension a - mm

Speed regulation At 1145-1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
(2) 1100	118,0 - 120,0 (116,0 - 122,0)	-		500 750	102,0 - 108,0 (100,0 - 110,0) 106,0 - 109,0 (104,0 - 111,0)	100 250	125,0 - 135,0 (120,0 - 140,0) 9,0 - 15,0 (6,5 - 17,5)

Checking values in brackets

B. Governor Settings

Checking of slider PRG check		Full load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12

Torque control travel on flyweight assembly dimension a - mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7

Checking values in brackets

En

Checking values in brackets

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11.1 p 20

4. Edition

En

PES 6 A 95 D 410 LS 2542 RQV 250-1100 AB 1177 DL
Komb.-Nr. 0 400 846 516 (MF)
0 400 846 518 (M)

superseded 4.8,
company MAN
D 2566 M/MF
engine 177 kW/2200 min⁻¹
MAN-Nr. 2-7440 (MF)
2-7441 (M)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 1,5-1,6 \\ (1,45-1,65) \end{matrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0±0,1	12,5 - 12,7	0,35(0,6)			
250	5,3-6,1	0,9-1,4	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1115	15,2-17,8	-	-	-	ca. 13	100	min. 8,2	200	0,7-0,9
ca. 47	11,0	1140-1150					250	6,7-6,9	500	3,4-3,8
	4,0	1180-1210					335-395	= 2,0	800	4,9-5,4
	1300	0-1,0							1100	7,6

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1100	124,5-126,5 (122,5-128,5)	1140-1150*	750	113,0-116,0 (110,5-118,5)	100	121,5-131,5 (118,5-134,5) = 14,7-15,3 mm RW	-	-
			500	107,5-113,5 (105,0-116,0)	250	6,8 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 1 g 16

1. Edition

En

PES 6 A 85 D 410 RS 2591 RSV 325-1150 A 8 C 2194 L
Komb.-Nr. 0 400 876 326

superseded by KHD
company BF 6 L 913
engine Schlepper DX 7.10

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,5-2,6$
(2,45-2,65) mm (from BDG) RW=9,0-12,0 mm

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	12,4+0,1	8,4-8,5	0,3(0,45)			
325	7,4-7,6	1,0-1,6	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control Control rod travel mm	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	Control rod travel mm 11
loose	800 0,3-0,7 X = 4,0		-	-	-	ca. 17	325 7,0 325 7,4-7,6 595-655=2,0		1200 12,4-12,5 500 13,5-13,6 925 12,9-13,1	
ca. 54	11,4 1240-1250 4,0 1320-1350 1485 0,3-1,4									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational speed limit Note: changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop Control rod travel mm 9	
cm ³ /1000 strokes 2		cm ³ /1000 strokes 3		cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		rev/min 8	
1200	84,0-85,0 (82,0-87,0)	1240-1250*	-	-	-	100	17,0-17,5 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 3,0 a 1

1. Edition

En

PES 3 A 90 D 410/3 RS 2640

RSV 325-1150 AOC 2157-1 L

supersedes -

Komb.-Nr. 0 400 863 006

company KHD

engine F 3 L 913

37 kW /2300 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,5-2,6
(2,45-2,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1140	9,6-9,7	6,6-6,7	0,3(0,45)			
325	7,6-7,8	1,0-1,6	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control rev/min 11	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 23	325	7,2	1140	9,6-9,7
	x = 4,25								500	9,9-10,0
							325	7,6-7,8	800	9,9-10,0
							510-570	= 2,0	1040	9,7-9,9
ca. 23	8,6	1175-1185								
2a	4,0	1230-1260								
	1430	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational speed limit Note changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop rev/min 8		4a Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7					
140	65,5-66,5 (63,5-68,5)	1175-1185*	500	50,5-52,5 (48,0-55,0)	800	100	13,0-13,6 mm RW	-	-	-	-
				58,5-60,5 (56,0-63,0)							

Checking values in brackets

* 1 mm less control rod travel than col 2

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B24

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 EIC 3,9 h

3. Edition

En

PES 6 A 90 D 320 RS 2674

RSV 300-1150 AOB 2001-2 R

supersedes 4.84

Komb.-Nr. 0 400 876 318

AOC 2001-2 R

company Eicher

engine EDL 6-4/5/6

109 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,2 - 2,3
(2,15-2,35) mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1125	12,0+0,1	7,8-7,9	0,25(0,5)			
300	8,3-8,5	1,3-2,3	0,3(0,45)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 1 5 6			4 Lower rated speed Control level: deflection in degrees 7 rev/min 8			3 Torque control rev/min 10 Control rod travel mm 11	
	Control rod travel mm 2	Control rod travel mm rev/min 3					Control rod travel mm 9			
lose	800	0,3-1,0	-	-	-	ca. 14	300	7,9	-	-
	x = 3,0						100	min. 19,5		
ca. 39	11,0	1165-1175					300	8,3-8,5		
2a	4,0	1205-1235					385-445	= 2,0		
	1375	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop Test oil temp 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		6 Rotational speed limit Note changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle 5 rev/min 6 cm ³ /1000 strokes 7		4a Idle stop rev/min 8 Control rod travel mm 9	
1125	77,5-78,5 (75,5-80,5)	1165-1175*	-	-	-	100	127,0-137,0 (124,0-140,0) = 19,5 - 21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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5.85

C1

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VAL 6,6 a

2. Edition

En

PES 6 A 95 D 320 RS 2684 RSV 325-1050 AOC 2178-2 R

Komb.-Nr. 0 400 876 321

supersedes 5.84
company Valmet
engine 611 D
79 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,5-2,6}{(2,45-2,65)}$ mm (from BDC) $\frac{9,0-12,0}{\text{mm RW}}$

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	7,9-8,0	6,5-6,7	0,35(0,6)			
325	4,6-4,8	1,3-1,7	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min.			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 26	325	4,2	1050	7,9-8,0
ca. 44	x = 5,0						325	4,6-4,8 420-480=2,0	500 840	8,6-8,7 8,2-8,4
	6,9	1090-1100								
	4,0	1135-1165								
2a	1295	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note changed to ... rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	rev/min 7	cm ³ /1000 strokes 8	rev/min 9	Control rod travel mm 10
1050	65,0-67,0 (63,0-69,0)	1090-1100*	500	57,0-60,0 (54,5-62,5)	100	19,5-21,0 mm RW	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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4.85

C2

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 5,5 p

1. Edition

En

PES 6 A 80 D 410 RS 2697

RQV 300-1350 AB 1175-1 L

Komb.-Nr. 0 400 846 541

supersedes

comp. Fiat

engine 8060, 24.642

103 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,2-2,3$ mm (from BDC) ; RW = 9,0-12,0 mm
(2,15-2,35)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1350	12,7+0,1	7,5-7,6	0,25(0,4)			
300	8,1-8,3	0,9-1,5	0,2(0,35)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1420	15,2-17,8	-	-	-	ca. 14	100	min. 9,7	250	0,2-0,5
ca. 60	11,7	1390-1400					300	8,1-8,3	550	3,0-3,4
	4,0	1530-1560					900	max. 1,0	1000	5,2-5,4
	1650	0 - 1,0				350-450			1550	9,7

Torque control travel a = 0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1350	0,7 bar 75,0-76,0 (73,5-77,5)	1390-1400 *	LDA 800	0,7 bar 69,0-71,0 (67,0-73,0)	100	115,0-125,0 (112,0-128,0)	1350 500	12,7+0,1 12,7+0,2
			LDA 500	0 bar 43,0-45,0 (41,5-46,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

FIA 5,5 p

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PESS 6 A..RS 2697 +RQV.. AB 1175-1L	0,70	0 0,38 0,33	12,7-12,8 10,9-11,0 12,2-12,3 11,4-11,6

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 FOR 4,4 a

1. Edition

En

PES 4 A 95 D 410 RS 2699

RS 350/1400 A2B 2149-1 L

supersedes -

Komb.-Nr. 9 400 085 237

company

Ford

engine

FTO 4,4 L

68 kW

Test ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,15-3,25
(3,10-3,30)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,2-9,3	5,7-5,9	0,35(0,6)			
350	6,4-6,6	0,9-1,3	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	FH ca.3	350	6,5	1400	9,2-9,3
	x =						280	7,4-8,0	500	10,1-10,2
FH max.							450	3,8-4,6	1000	9,8-10,0
VH ca.63	8,2	1445-1455					550	max. 3,0	1200	9,3-9,6
2a	4,0	1510-1540					1450	max. 2,0		
	1650	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to .) rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	4	cm ³ /1000 strokes 5	6	cm ³ /1000 strokes 7	8	rev/min 9	Control rod travel mm 9
1400	57,0-59,0 (55,0-61,0)	1445-1455*	500	53,5-56,5 (51,5-58,5)	100	112,0-122,0 = 19,0- 21,0 mm RW	-	-	-
			1000	67,0-70,0 (65,0-72,0)					

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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C5

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 MWM 5,9 c

1. Edition

En

PES 6 A 90 D 320 RS 2701

RSV 350-1150 A2B 2097-1R

superseded

company MWM

engine TD 229-6

135 PS

Komb.-Nr. 9 400 085 239

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,65-2,75}
(2,60-2,80) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	9,8-9,9	7,1-7,2	0,3 (0,5)			
350	5,9-6,1	1,1-1,5	0,25 (0,45)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Upper rated speed rev/min			Intermediate rated speed			(4) Lower rated speed			(3) Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 22	350	5,5	1150	9,8-9,9
	X =						100	min. 19,0	500	10,4-10,5
ca. 48	8,8	1190-1200					350	5,9-6,1	700	10,3-10,6
(2a)	4,0	1240-1270					570-630	= 2,0	950	10,0-10,3
	1350	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop		(6) Rotational-speed limit		(3a) Fuel delivery characteristics		Starting fuel delivery Idle		(5) Idle stop	
Test oil temp 40°C (104°F)		Note: changed to ...)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	70,5-71,5 (68,5-73,5)	119,0-1200*		500	62,5-64,5 (60,0-67,0)	100	19,0-21,0 mm RW	-	-
				700	67,5-69,5 (65,0-72,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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Test Specifications Fuel Injection Pumps 1A and Governors

40

WPP 001/4 MWM 3,9 a

1. Edition

En

PES 4 A 90 320 RS 2702 RSV 350-1150 A 2 B 2129-4 R
Komb.-Nr. 9 400 085 240

supersedes
company MWM
engine D 229-4
75 PS

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,65-2,75$ (2,60-2,30) mm (from BDC) ; RW = 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	8,6-8,7	5,9-6,0	0,3 (0,5)			
350	5,9-6,1	1,1-1,5	0,25 (0,45)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 23	350	5,5	1150	8,6-8,7
	x = 3,75						100	min. 19,0	500	9,8-9,9
							350	5,9-6,1	800	9,4-9,6
							590-650	= 2,0	1000	9,0
ca. 46	7,6	1190-1200								
(2a)	4,0	1225-1255								
	1400	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to ... rev/min				Idle		Control rod travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
1150	59,0-60,0 (57,0-62,0)	1190-1200*		500	59,5-61,5 (57,0-64,0)	100	19,0-21,0 mm RW	-	-
				800	64,0-66,0 (61,5-68,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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C7

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MWM 2, 9 a

1. Edition

En

PES 3 A 90 D 320 RS 2703

RSV 350-1150 A 2 B 2129-4 R

supersedes

Komb.-Nr. 9 400 085 241

company

MWM

engine

D 229-3

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,65-2,75 \\ (2,60-2,80) \end{matrix}$ mm (from BDC) $RW = 9,0-12,0$ mm

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	8,6-8,7	5,9-6,0	0,3 (0,5)			
350	5,9-6,1	1,1-1,5	0,25 (0,45)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 23	350	5,5	1150	8,6-8,7
	x = 3,75						100	min. 19,0	500	9,8-9,9
ca. 46	7,6	1190-1200					350	5,9-6,1	800	9,4-9,6
2a	4,0	1225-1255					590-650	= 2,0	1000	8,8-9,1
	1400	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to .)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1150	59,0-60,0 (57,0-62,0)	1190-1200*	500	59,5-61,5 (57,0-64,0)	100	19,0-21,0 mm RW	-	-	
			800	64,0-66,0 (61,5-68,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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C8

Test Specifications Fuel Injection Pumps 1A and Governors

40

WPP 001/4 MWM 5,9 b

1. Edition

En

PES 6 A 90 D 320 RS 2705

RSV 350-1400 A 2 B 2179-1 R

Komb.-Nr. 9 400 085 246

superseded
company MWM
engine A 229-6 PID

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1400	10,3+0,1	8,6-8,7	0,3 (0,5)			
325	6,4-6,6	1,3-1,7	0,25(0,45)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 18	325	6,0	1400	10,3-10,4
	X =						100	min. 19,0	500	11,0-11,1
ca. 62	9,3	1440-1450					325	6,4-6,6	900	10,7-11,0
2a	4,0	1515-1545					430-490	= 2,0		
	1600	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1400	85,5-86,5 (83,5-88,5)	1440-1450*		500	87,0-89,0 (84,5-91,5)	100	19,0-21,0 mm RW	325	4,25
				900	90,0-92,0 (87,5-94,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 CAS 8,3 a
2. Edition

En

PES 6 A 100 D 420 LS 3024 US-EP/RSV 375-1100 A2B 2062 DR
Komb.-Nr. 9 400 230 018

superseded 11.82
Case
company A-504 BDT
engine 210 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,0-2,1
(1,95-2,15) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque control valve) mm
1	2	3	4	2	3	6
1100	11,6+0,1	14,0-14,2	0,3 (0,6)			
375	6,5 - 6,6	1,8-2,4	0,3 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 23	375	6,0	1100	11,6+0,1
	x =						100	min. 19,0	700	12,0+0,3
ca. 50	10,6	1140-1150					375	6,4 - 6,6	600	12,1+0,1
2a	4,0	1205-1235					410-470	= 2,0		
	1260	0,3-1,7					800	max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to rev/min				Idle			
rev/min	cm ³ /1000 strokes			rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1100	139,5-141,5 (137,5-143,5)	1140-1150*		700	142,0-148,0 (140,0-150,0)	100	130,0-150,0 = ca. 17,0 mm RW	375	6,5
				600	max. 158,0 (max. 150,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

C10

Test 1-50 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 16,0 c 1

1. Edition

En

PE 12 AM 80 C 610 RS 2005

RQV 200-1150 AB 479 DL

supersedes

company KHD

engine: F 12 L 714 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,15-2,25$
($2,10-2,30$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,0	7,4 - 7,8	0,4			
1000	9,0	3,9 - 4,7				
1000	15,0	10,3 - 11,4				
200	9,0	2,8 - 3,6				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1150 1180 1240 1300 1370	15,0-18,0 11,8-15,5 5,5-10,6 0-6,0 0	-	-	-	ca. 10	100 200 300 500 730	7,0-7,6 4,3-6,6 2,6-3,4 1,2-2,6 0	1150	8,3

Torque control travel a = 1,5 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1130	71,5-73,5 (70,5-74,5)	1160-1180 *	600 800	74,0-77,0 (72,5-78,5) 75,5-78,5 (74,0-80,0)	100	min. 99,0	1150 1000 800 600 400	0 0,3-0,5 0,7-0,9 1,2-1,4 1,4-1,6

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 6,0 j

4. Edition

En

Testoil-ISO 4713

PES 6 MW 100/320 RS 1004
RQV 300...1150 MW 8 / 2R
1- 5- 3 - 6 - 2 - 4
0-60-120-180-240-300 $\pm 0,5^\circ$ (0,75°)

superseas 82
company Volvo
engine TD 60

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC) bei Regelweg = 9-12 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,3+0,1	9,15-9,35	0,35(0,6)			
300	5,2-5,4	0,95-1,35	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1150 1400	15,2-17,8 0-1,0	-	-	-	ca. 11	100 300 370-430 = 2,0	min. 7,0 5,2-5,4 2,0	300 800 1190	1,1-1,2 4,3-4,6 9,2
ca. 50	10,3 4,0	1190-1200 1235-1265				(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥	Torque-control travel ⑤		
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1000	91,5-93,5 (89,5-95,5)	1190-1200 *			100	20-24 mm RW 120,0-130,0 (117,0-133,0)		
					300	9,5-13,5 (7,0-16,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

C12

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 4,5 b

3. Edition

En

Testoil-ISO 4113

PES 4 MW 100/320 RS 1102

RQV 300-1100 MW 39

0 403 444 101

supersedes 8.83

company: Volvo-BM

engine: TD 45

85 kW (116 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12.0+0.1	10.0-10.2	0.35(0.6)			
300	6.4-6.5	0.95-1.35	0.35(0.55)			
1000	12.0+0.1		0.55(0.7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1100 1350	15.2-17.8 0 - 1.0				ca. 11	300 100	6.4-6.5 min. 8.0		
ca. 46	11.0 4.0	1140-1150 1190-1220				380-440 = 2.0				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
700	100-102 (98,0-104,0)	1140-1150*	1000	101,0-105,0 (99,0-107,0)	100 300	min. 140,0 9,5-13,5 (7,0-16,0)		
						100-220 (80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 4,5 d

2. Edition

En

Test ISO 4113

PES 4 MW 100/320 RS 1102
RQV 300-1200 MW 39-2
0 403 444 104

superseges 83
compa Volvo
engine TD 45
82,5 kW (112 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,80-2,90$
($2,75-2,95$) mm (from BDCRW $9,0-12,0$)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 5	Fuel delivery cm ³ /100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
700	11,8+0,1	9,5-9,7	0,35(0,6)			
300	6,5-6,6	1,3-1,7	0,35(0,55)			
1000	11,8+0,1		0,55(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1200 1450	15,2-17,8 0-1,0				ca. 12	100 300	min. 8,1 6,5-6,6		
ca. 48	10,8 4,0	1240-1250 1290-1320					400-550=2,0			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
700	95,0-97,0 (93,0-99,0)	1240-1250*	1000	94,0-98,0 (92,0-100,0)	100	19-21 mm RW max. 140 (143)		
						100-220 (80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 4,5 f

En 2. Edition

Testoil-ISO 4113

PES 4 MW 100/320 RS 1102

RQV 300-1100 MW 39-4

supersedes 7.84

company 0170

engine D 45

82,5 17

0 403 444 106

1-3 - 4 - 2

0-90-180-270 0,50(0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-290}{(2,75-2,95)}$ mm (from BDC) RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,7+0,1	9,4-9,6	0,35 (0,6)			
300	6,4-6,5	1,3-1,7	0,35 (0,55)			
1000	11,7+0,1		0,55 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1150 1350	15,2-17,8 0 - 1,0				ca. 12	300 100	6,4-6,5 min. 8,0		
ca. 48	10,7 4,0	1140-1150 1195-1225				320-650 ③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
700	94,0-96,0 (92,0-98,0)	1140-1150*	1000	96,5-99,5 (95,0-101,0)				
					100	130,0-140,0 (127,0-143,0)		
					300	13,0-17,0 (10,5-19,5)		
					100-220	(80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 4,5 e

3. Edition

En

Test oil ISO 4113

 PES 4 MW 100/320 RS 1102 RQV 300-1100 MW 39-5
 0 403 444 107

 1- 3- 4 - 2
 0-90-180-270 \pm 0,50 (0,75)

 superseded 10.84
 company Volvo
 engine: D 45
 85 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $2,80-2,90$
 (2,75-2,95) mm (from BDC) bei RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,6+0,1	11,1-11,3	0,35(0,6)			
300	6,4-6,5	1,3-1,7	0,35(0,55)			
1000	12,6+0,1		0,55(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1100 1350	15,2-17,8 0-1,0				ca. 14	300 100	6,4-6,5 min.8,0		
ca. 48	11,6 4,0	1140-1150 1210-1240				3a	320-450			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
700	109,0-111,0 (107,0-113,0)	1140-1150*	1000	110,0-114,0 (108,0-116,0)	100	130,0-140,0 (127,0-143,0)		
					300	13,0-17,0 (10,5-19,5)		
					100-220	(80-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VOL 6,0 r

2. Edition

En

Testoil-ISO 4113

PES 6 MW 100/320 RS 1111
RSV 325-1400 MW 2 A 314
0 403 476 016

supersedes 5.83
company Volvo
engine TAMD 60 C
184 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,10-3,20 mm (from BDCRW 9,0-12,0)
(3,05-3,25)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	13,0-0,1	12,1-12,3	0,35 (0,6)			
325	5,6-5,7	0,95-1,35	0,35 (0,55)			
1400	13,0+0,1		0,5 (0,7)			
1000	10,5+0,1					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control Control rod travel mm	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 22	325	5,1-5,2	350	13,5+0,1
	x = 2,75						325	5,6-5,7	500	13,5+0,1
ca. 60	1440-1450 = 12,0						100	min.19,0		
2a	1505-1535 = 4,0									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F)		6 Rotational speed limit Note changed to 3 rev/min		3a Fuel delivery characteristics		Starting fuel delivery 5 Idle		4a Idle stop Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1000	0,8 bar 121,0-123,0 (119,0-125,0)	1440-1450*		LDA 1400	0,8 bar 119,0-123,0 (117,0-125,0)	100	130,0-140,0 (127,0-143,0)	325	5,6-5,7
				LDA 1000	0 bar 83,0-85,0 (81,0-87,0)	325	9,5-13,5 (7,0-16,5)		

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
RS 1111 mit RSV...314	0,8 bar	0 bar 0,48 bar 0,18 bar	13,0-13,1 10,5-10,6 12,4-12,5 11,1-11,2

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 t 6

2. Edition

En

PE 6 P 100 A 320 RS 384-1 RQ 225/1000 PA 571

Komb.-Nr. 0 401 846 465

supersedes 7.84

company: DAF

engine: DKDL 1160

125 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke ^{3,2-3,3}
 (3,15-3,35) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,4+0,1	9,8-10,0	0,35 (0,6)			
250	7,5-7,7	0,9-1,3	0,35 (0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,6 4,0 1250	1045-1060 1100-1130 0-1,0	250	7,6	100 250 345-385=2,0	min,8,4 7,5-7,7	600 1000 820 900	11,4-11,5 10,6-10,8 11,0-11,2 10,8-11,1

Torque-control travel
on flyweight assembly dimension a = 0,5 mmSpeed regulation: At 1045-1060 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm Control rod travel
600	98,0-100,0 (96,0-102,0)	600		1000	93,0-97,0 (90,5-99,5)	100	180,0-220,0 (176,0-224,0) = 19,5-21,0 mm RW
						250	9,0-13,0 (6,5-15,5)

Checking values in brackets

05.85

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②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,1 q 6

5. Edition

tropicalized version

En

PES 6 P 120 A 720 LS 388

RQ 250/1100 PA 452

superseded 85

company MAN

engine D 2566 MK (F)
235 kW (1)

D 2566 MKF-Tropen

224 kW (2) MAN-Nr. 1-7980

Komb.-Nr. 0 402 046 195

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{3,0-3,1}{(2,95-3,15)}$ mm (from BDC) Zyl. 6; $RW=9,0-12,0$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,1+0,1	21,7-22,0	0,5 (0,9)			
250	6,3-6,5	1,1-1,7	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Setting point		Setting point		Test specifications		Setting point		Test specifications		Setting point	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600 VH	19,2-20,8 max. 46	600	20,0	10,3 4,0 1400	1145-1160 1185-1215 0 - 1,0	250	6,4	100 250 350-390	min. 7,9 6,3-6,5 90 = 2,0	100 750 865 975	1,3-11,4 3,1-13,2 12,7-12,9 11,7-12,0

Torque-control travel
on flyweight assembly dimension a = 0,7 mmSpeed regulation: At 1145-1160 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	Control rod travel mm 3a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	Control rod travel mm 6b
LDA 750	1,0 bar 217,0-220,0 (214,0-223,0)			LDA 650	1,0 bar 208,0-213,0 (205,0-216,0)	100	205,0-225,0 (201,0-229,0)
1100	180,0-185,0 (177,0-188,0)			LDA 500	0,34 bar 145,0-150,0 (142,0-153,0)		
(1)				LDA 500	0 bar 101,0-104,0 (98,0-107,0)		

Checking values in brackets

4.85

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B Governor Settings

(2)

MAN 11,1 q 6

- 2 -

Checking of slider PRG check ①		Full load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	Test specifications rev/min - 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600 VH =	19,2-20,8 max. 46°	600	20,0	10,3 4,0 1400	1145-1160 1185-1215 0 - 1,0	250	6,4	100 250 350-890 = 2,0	min. 7,9 6,3-6,5	1100 750 865 975	11,3-11,4 13,1-13,2 12,7-12,9 11,7-12,0

Torque control travel
on flyweight assembly dimension a

0,7

mm

Speed regulation At 1145-1160 min⁻¹

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery on governor control lever Test oil temp. 40 C (104 F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes / mm 7
(2) LDA 750 LDA 1100	1,0 bar 207,0-209,0 (203,0-213,0) 1,0 bar 171,0-177,0 (169,0-179,0)	-	LDA 650 LDA 500 LDA 500	1,0 bar 196,0-202,0 (194,0-204,0) 0,34 bar 141,0-147,0 (139,0-149,0) 0 bar 97,0-99,0 (93,0-103,0)	100	205,0-225,0 (201,0-229,0)

Checking values in brackets

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure - bar	Gauge pressure - bar	mm (1)
PES 6 P .. LS 388 + RQ .. PA 452	1,0	0 0,34 0,61	13,1-13,2 9,4-9,5 10,9-11,0 12,5-12,9

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

En

①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 7.0 g 1

2. Edition

En

PE 6 P 110 A 320 RS 413 Z RQV 250-1200 PA 499

Komb.-Nr. 0 401 846 433

supersedes 2.92

company Volvo

engine TD 70 G

155 kW (210 PS)

Test ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,0-3,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,2+0,1	10,3-10,5	0,4(0,8)			
250	5,2-5,4	1,6-2,0	0,3(0,6)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever mm 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever mm 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever mm 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1200	15,2-17,8	-	-	-	ca. 9	100	min. 6,7	200	0,6-0,8
ca. 62	10,2	1240-1250				300-410	250	5,2-5,4	530	3,1-3,5
	4,0	1360-1390							870	5,6-5,9
	1500	0 - 1,0							1200	7,9

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery idle switching point (6)	Torque-control travel (5)		
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,7 bar 103,0-105,0 (100,0-108,0)	1240-1250*	LDA 700	0 bar 79,0-82,0 (76,0-85,0)	100	170,0-210,0 = 20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

VOL 7,0 g 1 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6 P..RS 413 Z +RQV .. PA 499	0,70	0 0,38 0,17	11,2-11,3 9,6-9,7 11,0-11,1 9,7-9,9

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VOL 12,0 g 3
1. Edition

En

PE 6 P 120 A 320 RS 3075 RSV 200-1100 P 1/421-1

Komb.-Nr. 0 401 876 741

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes -
company Volvo
TID 121 K
engine 280 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.55-2.75) mm (from GDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Excess cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque control valve) mm
1	2	3	4	2	3	6
700	11,4+0,1	22,9 - 23,1	0,5(0,9)			
200	5,6-5,8	2,3 - 2,9	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,7	-	-	-	ca.20	200	5,2	-	-
	x = 4,0						200	5,6-5,8		
ca.58	10,4	1140-1150					255 - 315	=2,0		
2a	4,0	1165-1195								
	1340	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note changed to) rev/min				5			
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
700	229,0 - 231,0 (226,0-234,0)	1140-1150*	-	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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3.85

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MAN 11,9 a

4. Edition

En

PES6 P 120 A 720 LS 470 RQ 250/1100 PA 684
Komb.-Nr. 0 402 046 288
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes 9.84
company MAN
engine D 2866 KF
265 kW/2200 min⁻¹
MAN-Nr. 2-7355

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8}{(2,75-2,95)}$ - $\frac{2,9}{(2,75-2,95)}$ mm (from BDC) Zyl. 6; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,5±0,1	23,8-24,0	0,5(0,9)			
250	5,2-5,4	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9 rev/min 10		Torque control rev/min 11 Control rod travel mm 12	
600	19,2-20,8 VH = max. 46°	600	20,0	10,3 4,0 1300	1145-1160 1180-1210 0-1,0	250	5,3	100 250 315-355	min. 6,8 5,2-5,4 = 2,0	750 1100 935 990	12,5-12,6 11,3-11,4 12,4-12,6 11,7-12,0

Torque-control travel on flyweight assembly dimension a = 0,45 mm Speed regulation: At 1145-1160 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
LDA 750	1,0 bar 238,0-240,0 (235,0-243,0)		-	LDA 650	1,0 bar 239,0-245,0 (236,0-248,0)	100	225,0-245,0 (221,0-249,0)
LDA 1100	1,0 bar 214,0-218,0 (211,0-221,0)			LDA 500	0,4 bar 191,0-197,0 (188,0-200,0)		
				LDA 500	0 bar 139,0-141,0 (136,0-144,0)		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,9 a

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P..LS470 + RQ..PA684	1,0	0 0,40 0,11	12,5 - 12,6 9,3 - 9,4 11,1 - 11,2 9,4 - 9,7

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 15,8 f

5. Edition

En

PE 10 P 110 A 920/5 LS 3073 RQV 300-1150 PA 549
Komb.-Nr. 0 401 849 703

1-10-9 - 4- 3 - 6 - 5 - 8 - 7 - 2
0-27-72-99-144-171-216-243-288-315 ° ± 0,5 ° (± 0,75 °)

supersedes 3.84

company: KHD

engine: BF 10 L 413 F
265 kW/2050 min⁻¹
bzw. 259 kW (Maxidyne)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,8-2,9
(2,75-2,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0+0,1	14,4-14,6	0,4(0,75)			
300	6,9-7,1	1,8-2,4	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1220	15.2-17,8	-	-	-	ca. 24	100	min. 8,4	250	0,5-0,8
ca. 64	9.8 4.0 1400	1190-1200 1270-1300 0 - 1,0					300	6,9-7,1	550	3,6-4,2
							465-525	= 2,0	850	5,4-5,7
									150	7,8

Torque control travel a = 1,3 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0.9 bar 144,0-146,0 (141,0-149,0)	1190-1200 *	LDA 500	0 bar 98,0-102,0 (95,0-105,0)	100	130,0-160,0	700 150 050 025	2,0+0,1 0,7+0,2 1,2+0,2 1,5+0,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.85

Testoil-ISO 4113

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D. Adjustment Test for Manifold Pressure Compensator

KHD 15,8 f

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 10 P .. LS 3073 + RQV .. PA 549	0,90	0 0,50 0,35	12,0-12,1 10,0-10,1 11,5-11,6 10,4-10,6

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 PEN 12,0 g

1. Edition

En

PE 6 P 120 A 320 RS 3075

RQ 750 PA 694

Komb.-Nr. 0 401 846 786

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company:

engine:

Volvo-Penta
TD 120 BHC/BRC

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,55-2,75) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	9,8-9,9	18,3 - 18,7	0,5(0,9)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
-	-	-	-	8,8	750-755	-	-	-	-	-	-
				4,0	776-789						
				850	0 - 1,0						

Torque-control travel

on flyweight assembly dimension a =

mm

Speed regulation: At

750 - 755 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3		rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
700	183,0 - 187,0 (181,0 - 189,0)	-		-	-	-	-

Checking values in brackets

3.85

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Testoil ISO 4113

D5

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 11,4 i 10

1. Edition

En

PES 6 P 120 A 820 LS 3077-10 RQ 300/1100 PA 585-2
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes -
company: Daimler-Benz
engine: OM 407 LA

Komb.-Nr. 0 402 046 722

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1 mm (from BDC) Zyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,5+0,1	21,3-21,5	0,5			
300	5,5-5,7	1,4-2,0	0,8			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3				Idle speed regulation Setting point rev/min 7				Torque control rev/min 11	
Control rod travel mm 2		Test specifications Control rod travel mm 4				Test specifications Control rod travel mm 8				Control rod travel mm 12	
650 VH =		19,2-20,8 max. 46 °				1145-1160 1200-1230				-	
		20,0				4,9				-	
		12,5 4,0				100 300 370-410=2,0mm					

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At 1145-1160 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7	
LDA 1100		-		LDA 600		100	
0,70 bar 213,0-215,0				0,70 bar 201,0-207,0		170,0-190,0	
				LDA 500			
				0 bar 146,0-148,0			

Checking values in brackets

4.85

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D6

D. Adjustment Test for Manifold Pressure Compensator

MB 11,4 i 10 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	diminution difference mm (1)
PES6P..LS3077-10 + RQ..PA 585-2	0	0,31 0,41	10,9-11,1 11,9-12,0 12,7-13,0

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 11,4 i 11

1. Edition

En

PES 6 P 120 A 820 LS 3077-10 RQV 300-1100 PA 605-1
Komb.-Nr. 0 402 046 726

supersedes

company Daimler-Benz

engine OM 407 LA

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 0 67

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prastroke $4,0-4,1$ mm (from BDC) Zyl. 6; RW=9,0 - 12,0 mm
(3,95-4,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,5+0,1	21,3-21,5	0,5(0,9)			
300	5,5-5,7	1,4-2,0	0,8(1,2)			
600	-	C, Sp. 4 u. 5	0,8(1,2)			
500						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1100	15,2-17,8	-	-	-	ca. 11	100	min. 6,0	300	1,7-1,8
ca. 63	12,5	1140-1150					300	4,8-5,0	500	3,2-3,5
	4,0	1210-1240							800	4,6-5,0
	1350	0 - 1,0				325-415			1100	7,1
						③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1100	0,7 bar 213,0-215,0 (210,0-218,0)	1140-1150 *	LDA 600	0,7 bar 201,0-207,0 (198,0-210,0)	100	170,0-190,0 (166,0-194,0)	-	-
			LDA 500	0 bar 146,0-148,0 (143,0-151,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

D8

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D. Adjustment Test for Manifold Pressure Compensator

MB 11, 4 i 11 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
PES 6 P..LS3077-10 + RQV..PA 605-1	0	0,31 0,42	10,9-11,1 11,9-12,0 13,0-13,2

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ② and Governors

PES 6 P 120 A 820 LS 3077-10 RQ 300/1100 PA 761
Komb.-Nr. 0 402 046 762
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes -
company Daimler-Benz
engine OM 407 A
177 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC) cyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,5+0,1	15,2 - 15,4	0,5 (0,9)			
300	5,0-5,2	1,4 - 2,0	0,8 (1,2)			
600	-	C, Sp. 4 u.5	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
600	19,2-20,8	650	20,0	9,5	1145-1160	300	4,9	100	min. 6,5	-	-
VH	=max. 46°			4,0	1200-1230			300	4,8 - 5,0		
								360-400	= 2,0		

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation: At

1145-1160 min⁻¹

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
100	152,0-154,0 (149,0-157,0)	-		500	150,0 - 156,0 (147,0 - 159,0)	100	150,0 - 170,0 (146,0 - 174,0)

Checking values in brackets

4.85

Test oil ISO 4113

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 9,6 a 1

1. Edition

En

PES 6 P 110 A 720 RS 3079
Komb.-Nr. 0 402 076 716

RSV 300-1000 P 8 A 486

supersedes -

company

KHD

engine

BF 6 L 413 FR
165 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$
(2,75-2,95) mm (from BDC); RW = 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	13,5+0,1	15,2 - 15,4	0,4 (0,75)			
300	7,6-7,8	1,3 - 1,9	0,4 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 11	300	7,7	1000	13,5 - 13,6
	x = 2,0						300	7,6-7,8	350	14,7 - 15,3
ca. 40	12,5	1040-1050					300-360	= 2,0	550	13,5 - 13,6
②a	4,0	1060-1090								
	1225	0,3 - 1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp 40°C (104°F)		Note changed to ... rev/min				Idle		Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	3	4	cm ³ /1000 strokes 5	6	rev/min 7	cm ³ /1000 strokes 8	rev/min 9	10
LDA 1000	0,9 bar 151,5-154,5 (149,0-157,0)	1040-1050*	LDA 750	0,9 bar 152,0-156,0 (149,0-159,0)	100	190,0-210,0 (186,0-214,0)	-	-	-
			LDA 500	0 bar 123,0-125,0 (120,0-128,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

KHD 9,6 a 1

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PES 6 P..RS 3079 + RSV..P 8 A 486	0,90	0 0,53 0,43	13,5 - 13,6 12,4 - 12,5 12,9 - 13,0 12,6 - 12,8

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 9,6 b
4. Edition

En

PES 6 P 110 A 720 RS 3079

RSV 300-1150 P 8/486

supersedes 11.83

Komb.-Nr. 0 402 076 714

.. P 8 A 486

company KHD

engine BF 6 L 413 FRC
199 kW (271 PS)

bei 2300 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,8-2,9}
(2,75-2,95) mm (from BDN) ^{RV} = 9,0 - 12,0 mm

Testoil-ISO 4113

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	14,2+0,1	17,7 - 18,1	0,4 (0,8)			
300	7,2-7,3	1,3 - 1,9	0,4 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0	-	-	-	ca. 13	300	6,7	-	-
	x = 2,75									
ca. 48	13,2	1190-1200					300	7,2-7,3		
2a	4,0	1220-1250					300-360	= 2,0		
	1390	0,3 - 1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery idle		5 4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to ...							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1150	0,9 bar 177,0-181,0 (174,0-184,0)	1190-1200*	LDA 800	0,9 bar 175,0-179,0 (172,0-182,0)	100	190,0-210,0	-	-	
			LDA 500	0 bar 123,0-125,0 (120,0-128,0)					

Checking values in brackets

* 1 mm less control rod travel than col 2

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4.85

D. Adjustment Test for Manifold Pressure Compensator

KHD 9,6 b

- 2 -

Test at n = 550 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 P..RS 3079 mit .. P 8/486 A 486	1,20		14,2 - 14,3
		0	11,9 - 12,0
		0,57	13,8 - 13,9
		0,35	12,4 - 12,8

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 9,6 a
2. Edition

En

PES 6 P 110 A 720 RS 3079

RSV 300-1250 P 8/486

supersedes 9.82

Komb.-Nr. 0 402 076 715

" P 8 A 486

company KHD

engine BF 6 L 413 FRC

199 kW/2500 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9

Port closing at prestroke

(2,75-2,95)

mm (from BD₅): RW = 9,0 - 12,0 mm

Tesi-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
1250	14,5+0,1	18,0 - 18,4	0,4 (0,8)			
300	7,2-7,3	1,3 - 1,9	0,4 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 15	300	7,2	1250	14,5-14,6
	x = 4,0						300	7,2-7,3	350	15,7-16,3
ca. 55	13,5	1290-1300					300-360	= 2,0	550	14,5-14,6
2a	4,0	1330-1360								
	1490	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery		5		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to 1 rev/min				Idle					
rev/min	cm ³ /1000 strokes		rev/min	cm ³ /1000 strokes		rev/min	cm ³ /1000 strokes	rev/min		Control rod travel mm	
1	2	3	4	5		6	7	8		9	
LDA 1250	0,9 bar 180,0-184,0 (177,0-187,0)	1290-1300*	LDA 800	0,9 bar 178,0-182,0 (175,0-185,0)		100	190,0-210,0 (186,0-214,0)	-		-	
			LDA 500	0 bar 123,0-125,0 (120,0-128,0)							

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

KHD 9,6 a

- 2 -

Test at n = 550 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 P..RS 3079 + RSV..P 8/486 ..P 8 A 486	0,90		14,5 - 14,6
		0	12,1 - 12,2
		0,57	13,9 - 14,0
		0,30	12,8 - 13,0

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 10,0 o3

3. Edition

En

PE 6 P 110 A 320 RS 3080-1 RQV 250-1025 PA 589

Komb.-Nr. 0 401 846 768

supersedes 12.63

company: Volvo

engine: TD 100 FA

220 kW (299 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers.

A. Fuel Injection Pump Settings

Port closing at prestroke $3,0 - 3,1$ mm (from BDC) = RW 9,0 - 12,0 mm
(2,45-3,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,2±0,1	17,9 - 18,1	0,4(0,8)			$2,5 \pm 0,1$ (2,2 - 2,9)
250	4,3-4,5	1,7 - 2,1	0,3(0,6)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1090	15,2-17,8	-	-	-	ca. 9	100	min. 5,8	200	0,7-0,9
ca. 64	12,2	1085-1095					250	4,3-4,5	475	3,9-4,5
	4,0	1160-1190							660	
	1300	0 - 1,0					315-375 = 2,0		bis 945	5,4-6,6
						③a			1025	7,6

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA	0,75 bar	1085-1095*	LDA	0,75 bar	100	150,0-200,0 (146,0-204,0)	-	-
700	179,0-181,0 (176,0-184,0)		1000	170,0-174,0 (167,0-177,0)		= 20,0-21,0 mm RW		
			LDA	0 bar				
			700	130,5-133,5 (128,0-136,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

D17

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4.85

D. Adjustment Test for Manifold Pressure Compensator

VOL 10,0 03

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
PE6P .. RS 3080-1 + RQV .. PA 589	0,42		12,3 - 12,4	
		0,75	13,2 - 13,3	
		0	10,5 - 10,6	
		0,26	10,8 - 11,1	

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 19,0 d 1

1. Edition

En

PE 12 P 110 A 920 LS 3081

RQV 300-1250 PA 696

supersedes

Komb.-Nr. 0 401 840 716

company KHD

1- 4- 9- 8- 5 - 2 - 11- 10- 3 - 6 - 7 - 12

engine BF 12 L 413 FC

0-15-60-75-120-135-180-195-240-255-300-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)315 kW /2500 min⁻¹
Test oil ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,9±0,1	13,0-13,4	0,5(0,8)			
300	6,7-6,9	1,8-2,4	0,7(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1300	15,2-17,8	-	-	-	ca. 26	100	min.8,2	300	1,2-1,8
ca. 64	9,9 4,0 1500	1290-1300 1380-1410 0-1,0				310-550	300	6,7-6,9	400 470 700 1300	2,5-2,8 3,0-3,5 4,3-4,5 8,6

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b ④a	Fuel delivery characteristics high idle speed ⑤a ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1250	0,75 bar 130,0-134,0 (128,0-136,0)	1290-1300*	LDA 850	0,75 bar 121,5-125,5 (118,5-128,5)	100	130,0-160,0	-	-
			LDA 500	0 bar 75,0-79,0 (72,0-82,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

KHD 19,0 d 1

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 12 P..LS 3081 + RQV..PA 696	0,75	0 0,42 0,20	10,9-11,0 9,0-9,1 10,5-10,6 9,3-9,5

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 19,0 d 2

1. Edition

En

PE 12 P 110 A 920 LS 3081

RQV 300-750 PA 744

Komb.-Nr. 0 401 840 726

1- 4- 9- 8- 5- 2- 11- 10- 3- 6- 7- 12

0-15-60-75-120-135-180-195-240-255-300-315° ± 0,5° (± 0,75°)

supersedes KHD

company: BF 12 L 413 FC

engine 263 kW/1500 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,5+0,1	14,9-15,1	0,4(0,75)			
300	6,3-6,5	1,8-2,4	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	790	15,2-17,8	-	-	-	ca. 19	100	min.7,8	300	1,3-1,4
ca. 55	10,5	790-800					300	6,3-6,5	400	2,7-3,7
	4,0	835-865					350-410	2,0	470	4,0-4,4
	1000	0-1,0							790	8,5

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
750	149,0-151,0 (146,0-154,0)	790-800*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 19,0 d 3

1. Edition

En

PE 12 P 110 A 920 LS 3081

RQV 300-1075 PA 746

Komb.-Nr. 0 401 840 727

1- 4- 9- 8- 5- 2- 11- 10- 3- 6- 7- 12

0-45-60-105-120-165-180-225-240-285-300-315° ± 0,5° (± 0,75°)

supersedes

company KHD

engine BF 12 L 413 F¹
333 kW/2150 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1075	11,9+0,1	14,8-15,2	0,5(0,8)			
300	6,7-6,9	1,9-2,5	0,7(1,0)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1120	15,2-17,8	-	-	-	ca. 19	100 300	min. 8,2 6,7-6,9	300 380 430 700 1120	1,3-1,4 2,3-2,7 2,8-3,3 5,3-5,6 8,5
ca. 54	10,9 4,0 1350	1115-1125 1215-1245 0-1,0				315-465 ③a				

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1075	0,75 bar 148,0-152,0 (146,0-154,0)	1115-1125*	LDA 650	0,75 bar 143,0-147,0 (140,0-150,0)	100	125,0-155,0 (121,0-159,0)	-	-
			LDA 450	0 bar 122,0-126,0 (119,0-129,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Testoil-ISO 4113

D22

D. Adjustment Test for Manifold Pressure Compensator

KHD 19,0 d 3

- 2 -

Test at n = 450 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
PE 12 P..LS 3081 + RQV..PA 746	0,75	0	11,9-12,0	
		0,41	10,8-10,9	
		0,27	11,6-11,7	
			11,0-11,2	

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 SSC 19,0 b

1. Edition

En

PE 6 P 110 A 320 LS 3084

RQV 300-750 PA 614

Komb.-Nr. 0 401 846 750

supersedes

company SSCM

engine 6 L 150

316 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$ mm (from BDC); RW 0 9,0-12,0 mm
(2,75-2,35)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
750	13,0+0,1	24,5-24,8	0,4(0,75)			
300	4,5-4,7	1,8-2,3	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	780	15,2-17,8	-	-	-	ca. 11	100	min.6,1	275	1,3-1,5
ca. 66	12,0	790-800					300	4,5-4,7	600	5,5-5,8
	4,0	840-870							750	8,0-8,3
	950	0 - 1,0				310-410				
						③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
750	245,0-248,0 (242,5-250,5)	790-800 *	-	-	300	18,0-23,0 (15,5-25,5)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2
4.85

D24

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BAO 21,2 a 1

1. Edition

En

PE 8 P 130 A 520/4 RS 3085 RQV 400-750 PA 618
Komb.-Nr. 0 401 848 750

supersedes

company Baudouin

engine 8 P 15

1-2-4-5-6-3-7-8 je $45^\circ \pm 0,5^\circ$ ($\pm 0,75^\circ$)

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

tuhing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{3,2-3,3}
(3,15-3,35) mm (from BDQ) RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	8,5-8,6	19,1-19,5	0,5(0,9)			
400	3,9-4,1	2,3-2,9	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	830	15,2-17,8	-	-	-	ca. 16	100	min. 5,6	400	0,9-1,1
ca. 48	7,5 4,0 900	750-755 775-785 0-1,0				355-455	400 400-450 = 2,0	3,9-4,1	475 600 750	1,8-2,3 1,8-2,3 5,2

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
700	191,0-195,0 (188,0-198,0)	750-755*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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E1

①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 BAO 21,2 a

2. Edition

En

PE 8 P 130 A 520/4 RS 3085 RQV 400-750 PA 618-1

Komb.-Nr. 0 401 848 750

1-2-4-5-6-3-7-8 je $45^{\circ} \pm 0,5^{\circ}$ ($\pm 0,75^{\circ}$)

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 0 67

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

superseded 3.82

company Baudouin

engine 8 P 15

467 kW (635 PS)

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	8,5-8,6	19,1-19,5	0,5(0,9)			
400	3,9-4,1	2,3 - 2,9	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever mm 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever mm 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever mm 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	830	15,2-17,8	-	-	-	ca. 16	100	min. 5,6	350	0 - 0,2
ca. 48	7,5	750-755					400	3,9-4,1	455	2,0
	4,0	775-785					775-785=2,0		640	2,0-3,8
	900	0 - 1,0							700	5,1
									750	

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
700	191,0-195,0 (188,0-198,0)	750-755*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 GUS 21,2 b

1. Edition

En

PE 8 P 130 A 520 RS 3085-1 RQV 350-900 PA 749
Komb.-Nr. 0 401 838 704

1-2-4-5-6-3-7-8 je 45 ° ± 0,5 ° (± 0,75 °)

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

compa 614 SCOR

engine E 212

Test ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,6-3,7$
($3,55-3,75$) mm (from BDC); RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	8,5-8,6	18,8-19,1	0,5 (0,9)			
350	4,0-4,2	2,2-2,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	950	15,2-17,8	-	-	-	ca. 10	100	min. 5,6	300	1,0-1,2
ca. 58	7,5 4,0 1100	940-950 965-995 0 - 1,0				355-455	350	4,0-4,2	500	2,8-3,2
						3a			700	4,8-5,1
									900	7,7

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
900	188,0-191,0 (185,0-194,0)	940-950 *	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Test Specifications Fuel Injection Pumps ② and Governors

PES 6 P 110 A 320 RS 3105-1
Komb.-Nr. 0 402 046 737

RQ 275/1150 PA 653

supersedes 9.83

company: IVECO-Unic

engine: 8220-32
129 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3, 15-3, 35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,3+0,1	11,7-12,0	0,4(0,75)			
275	5,9-6,1	1,5-2,0	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
600	19,2-20,8	600	20,0	10,3	1195-1210	275	6,0	100 min. 7,5	1150	11,5-11,6	
VH =	max. 46°			4,0	1245-1275			275 5,9-6,1	600	11,5-11,7	
				1400	0-1,0			350-390=2,0			

Torque-control travel on flyweight assembly dimension a = 0 mm Speed regulation: At 1195-1210 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7
LDA	0,7 bar			LDA	0 bar	100	160,0-180,0
1150	117,0-120,0 (114,5-122,5)			400	82,0-85,0 (79,0-88,0)		(156,0-184,0)

Checking values in brackets

Test oil ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

UNI 9,6 a 1 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 P..RS3105-1 + RQ..PA 653	0,70	0 0,255 0,24	11,3-11,4 10,2-10,3 10,9-11,0 10,4-10,6

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 K 3

2. Edition

En

PE 6 P 120A 320 RS 3118-2 RQV 250-900 PA 657-5
Komb.-Nr. 0 401 846 796
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes 2.85
company: Volvo
engine: TD 121 FC
232 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

TestchISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $2,6-2,7$
($2,55-2,75$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,4+0,1	19,7-20,0	0,5(0,9)			2,5 [±] 0,1 (2,2-2,9)
250	3,3-3,5	1,8-2,3	0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	980	15,2-17,8	-	-	-	ca. 7	100	min. 4,8	200	0,5-0,9
ca. 62	10,4 4,0 1100	940-950 1000-1030 0 - 1,0					250	3,3-3,5	500	4,2-4,8
							280-340	= 2,0	660	6,4-6,6
									850	
									900	7,2

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,7 bar 197,0-200,0 (194,0-203,0)	940-950 *	LDA 700	0 bar 150,0-154,0 (147,0-157,0)	100	240,0-280,0 = 20,0-21,0 mm RW (236,0-284,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

05.85

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E6

D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 K3 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	diminution difference mm (1)
PE 6 P..RS 3118-2 +RQV..PA 657-5	0,70	0 0,43 0,17	11,4-11,5 9,1-9,2 11,2-11,3 9,2-9,7

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ② and Governors

Testoil-ISO 4113

PE 6 P 110 A 320 LS 3805 RQ 300/1000 PA 187

supersedes 3.82

company: Daimler-Benz

engine: OM 421

140 kW (190 PS)

Komb.-Nr. 0 401 846 762

1 - 6 - 3 - 5 - 2 - 4

0 -75 -120-195-240-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\begin{matrix} 4,0 - 4,1 \\ (3,95-4,15) \end{matrix}$ mm (from BDC) Zyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,5+0,1	12,1 - 12,3	0,4(0,8)			
300	8,0-8,2	1,5 - 2,1	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
650	13,0-14,0	650	13,5	10,6 4,0	1045-1060 1080-1110	300	8,1	100 300 430-470 = 2,0mm	min.9,5 8,0-8,2	-	-

Torque-control travel
on flyweight assembly dimension a = mmSpeed regulation: At $1045 - 1060 \text{ min}^{-1}$ 1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1000	120,5 - 122,5 (117,5 - 125,5)	-	600	102,0 - 106,0 (99,0 - 109,0)	100	130,0-150,0 (126,0-154,0)

Checking values in brackets

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 11,0c

2. Edition

En

Testoil-ISO 4113

PE 6 P 110 A 320 LS 3805

RQ 300/1150 PA 187-2R

Komb.-Nr. 0 401 846 723

supersedes 10.73

company Daimler-Benz

engine OM 421

(158,0kW - 215PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC) $\phi 1.6$, $R=9,0-12,0$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,5-12,6	12,2 - 12,4	0,4 (0,75)			
300	8,3-8,5	1,1 - 1,7	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation Setting point ④				Idle speed regulation Setting point ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	13,8-14,6	600	14,0	11,5	1195-1210	300	8,4	100	min. 9,9	1150	12,5-12,6
				4,0	1245-1275			300	8,3-8,5	600	12,5-12,7
				1400	0 - 1,0			430-470=2,0			

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1150	122,0 - 124,0 (119,5 - 126,5)	600	600	114,0 - 118,0 (111,0 - 121,0)	100	130,0 - 150,0 (126,0-154,0)

Checking values in brackets

4.85

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E9

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 11,0 i 1

3. Edition

En

Testoil-ISO 4113

PE 6 P 110 A 320 LS 3805 RQV 300-1150 PA 524-6

1 - 6 - 3 - 2 - 4
 0 - 75 - 120 - 195 - 240 - 315° \pm 0,5° (\pm 0,75°)

Komb.-Nr. 0 401 846 756

supersedes 83

company: Daimler-Benz

engine: OM 421

148 kW (201 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 4,0 - 4,1 \\ (3,95 - 4,15) \end{matrix}$ mm (from BDC) Zyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,6+0,1	12,7 - 12,9	0,4(0,8)			
300	8,7-8,9	1,6 - 2,2	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1150	15,2-17,8	-	-	-	ca. 19	100 300	min. 10,0 8,3-8,5	250 550 850 1150	1,0-1,2 3,4-3,7 4,9-5,3 7,6
ca. 65	11,6 4,0 1500	1190-1200 1240-1270 0 - 1,0				330-740 (3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	127,0-129,0 (124,0-132,0)	1190-1200 *	600	104,5-108,5 (101,5-111,5)	100	130,0-150,0 (126,0-154,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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②

Test Specifications

Fuel Injection Pumps ②

and Governors

40

WPP 001/4 MB 11,0 ol

1. Edition

En

PE 6 P 110 A 320 LS 3805-10 RQ 300/1000 PA 187
Komb.-Nr. 0 401 846 762

1- 6- 3 - 5 - 2 - 4
0-75-120-195-240-315 ° ± 0,5 ° (± 0,75 °)

supersedes_

company: Daimler-Benz

engine: OM 421

140 kW (190 PS)

Test ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC) Zyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,5+0,1	12,1-12,3	0,4(0,8)			
300	8,0-8,2	1,5-2,1	0,4(0,7)			
600	-	C, Sp. 4 u. 5	0,6(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
650	13,0-14,0	650	13,5	10,6 4,0	1045-1060 1080-1110	300	8,1	100 300 430-470	min. 9,5 8,0-8,2 =2,0mm	-	-

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation: At 1045-1060 min⁻¹

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery idle speed ⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/ mm 7
1000	120,5-122,5 (117,5-125,5)	-	600	102,0-106,0 (99,0-109,0)	100	130,0-150,0 (126,0-154,0)

Checking values in brackets

4.85

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E11

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 11,0 c 4

2. Edition

En

PE 6 P 110 A 320 LS 3805-10 RQV 300-1150 PA 524-4

Komb.-Nr. 0 401 846 748

1 - 6 - 3 - 5 - 2 - 4

0 -75 -120-195-240-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes 10.84

company: Daimler-Benz

engine: OM 421

159 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1 mm (from BDC) Zyl. 6
(3,95-4,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,7+0,1	13,2-13,4	0,4(0,8)			
300	7,8-8,0	1,2-1,8	0,4(0,7)			
600	-	C, Sp.4 u.5	0,6(0,9)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 22	100	min.9,5	300	1,6-1,8
							300	7,8-8,0	800	5,8-6,2
							410-470=2,0		1200	8,2-8,4
ca. 55	10,7	1190-1200							1260	10,0
	4,0	1235-1265								
	1400	0-1,0								

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	132,0-134,0 (129,5-136,5)	1190-1200*	600	110,0-114,0 (107,0-117,0)	100	130,0-150,0 (126,0-154,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MB 11,0 d 3

1. Edition

En

PE 6 P 110 320 LS 3805-10
Komb.-Nr. 0 401 876 717

RSV 650-1150 P 1 A 820

supersedes

company Daimler-Benz

engine OM 421

159 kW (1)

155 kW (2)

151 kW (3)

1-6-3-5-2-4

0-75-120-195-240-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

4,0-4,1

Port closing at prestroke

(3,95-4,15)

mm (from BDC) Zyl. 6; RW = 9,0-12,0 mm

Testoil-ISO 4113

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1130	12,1±0,1	13,0-13,2	0,4 (0,8)			
650	6,0-6,2	1,8-2,4	0,4 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-0,7	-	-	-	ca. 30	650	6,1	-	-
	x = 3,5						650	6,0-6,2		
							650-715	= 2,0		
ca. 57	11,1	1160-1170								
②a	4,0	1185-1205								
	1300	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to) rev/min							
rev/min	cm ³ /1000 strokes			rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1130		1160-1170*	-	-		100	140,0-160,0 (136,0-164,0)	-	-
(1)	130,0-132,0 127,5-134,5)								
(2)	128,0-130,0								
(3)	124,0-126,0								

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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E13

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MB 11,0 d 1

1. Edition

En

PE 6 P 110 A 320 LS 3805-10
Komb.-Nr. 0 401 876 739

RSV 650-1150 P 1 A 820-3

supersedes Daimler-Benz
company
engine OM 421
159 kW

1- 6- 3 - 5 - 2 - 4
0-75-120-195-240-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

4,0-4,1

Port closing at prestroke (3,95-4,15) mm (from BDC) RW = 9,0 - 120,0 mm, Zyl. 6

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1180	12,1 \pm 0,1	13,0 - 13,2	0,4 (0,8)			
650	6,0-6,2	1,6 - 2,2	0,4 (0,7)			
975	-	C, Sp. 4 u. 5	0,6 (0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-0,7	-	-	-	ca. 30	650	6,1	1180	12,0 - 12,1
	x = 4,0						100	min. 19,5	975	12,5 - 12,7
ca. 57	11,1	1210-1220					650	6,0 - 6,2		
2a	4,0	1240-1260					650 - 715	= 2,0		
	1350	0,3 - 1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		5		4a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to) rev/min									
rev/min	cm³/1000 strokes			rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min		Control rod travel mm	
1	2	3		4	5	6	7	8		9	
1180	130,0 - 132,0 (127,5 - 134,5)	1160-1170 *		975	130,0 - 134,0 (127,0 - 137,0)	100	140,0-160,0 (136,0-164,0)	-		-	

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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E14

Test Specifications Fuel Injection Pumps ①A and Governors

40

WPP 001/4 MB 11,0 d 4

1. Edition

En

PE 6 P 110 320 LS 3805-10 RSV 650-1150 P 1/820
Komb.-Nr. 0 401 876 717
1- 6- 3 - 5 - 2 - 4
0-75-120-195-240-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes
company Daimler-Benz
OM 421
engine 159 kW (1)
155 kW (2)
151 kW (3)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4-113

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC) Zyl. 6; RW=9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1130	12,1+0,1	13,0-13,2	0,4(0,8)			
650	6,0-6,2	1,8-2,4	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 30	650	6,1	-	-
	X = 3,5						650	6,0-6,2		
							650-715	=2,0		
ca. 57	11,1	1160-1170								
②a	4,0	1185-1205								
	1300	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational speed limit		③a Fuel delivery characteristics		Starting fuel delivery Idle ⑤		④a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to) rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min 1	cm ³ /1000 strokes 2	3		4	5	6	7	8	9
1130		1160-1170*	-	-	-	100	140,0-160,0 - (136,0-164,0)	-	-
(1)	130,0-132,0 (127,5-134,5)								
(2)	128,0-130,0								
(3)	124,0-126,0								

Checking values in brackets

* 1 mm less control rod travel than col. 2

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4.85

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MB 11,0 d 2

1. Edition

En

PE 6 P 110 A 320 LS 3805-10 RSV 650-1200 P 1 A 820-3
Komb.-Nr. 0 401 876 717

1- 6- 3 - 5 - 2 - 4
0-75-120-195-240-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersede
company Daimler-Benz
engine OM 421
159 kW (1)
155 kW (2)
151 kW (3)

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1
(3,95-4,15) mm (from BDC) Zyl. 6

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
1180	12,0±0,1	13,0-13,2	0,4 (0,8)			
650	6,0-6,2	1,6-2,2	0,4 (0,7)			
1000	-	C, Sp. 4 u. 5	0,6 (0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 30	650	6,1	1180 1000	12,0-12,1 12,5-12,7
	x = 4,5						650 650-715 = 2,0	6,0-6,2		
ca. 57	11,0	1210-1220								
2a	4,0	1245-1265								
	1300	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp 40°C (104°F)		Note: changed to) rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	4	cm ³ /1000 strokes 5	6	cm ³ /1000 strokes 7	8	rev/min 9	Control rod travel mm 10
1180 (1) (2) (3)	130,0-132,0 (127,5-134,5) 128,0-130,0 124,0-126,0	1210-1220*	1000	130,0-134,0 (127,0-137,0)	100	140,0-160,0 (136,0-164,0)	0 -	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

4.85

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E16

①

Test Specifications

Fuel Injection Pumps ①

and Governors

WPP 001/4 MB 14,6 K

4. Edition

En

PE 8 P 120 A 320 LS 3807 RQV 300-1150 PA 545

1-8-7-2-6-3-5-4 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

superse 9,83

company Daimler-Benz

engine OM 422 A

243 kW (330 PS)

Komb.-Nr. 0 401 848 732

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	10,7+0,1	15,8-16,0	0,5(0,9)			
300	5,2-5,4	1,2-1,8	0,8(1,2)			
600						
900	-	C, Sp. 1 - 5	0,7(1,2)			
500						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 17	100	min. 6,7	300	1,6-1,8
ca. 54	9,7 4,0 1350	1190-1200 1235-1265 0-1,0					300	5,0-5,2	800	6,0-6,2
							335-405 = 2,0		1200	8,1-8,3
									1260	9,9

Torque control travel a = 0,70 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1150	0,7 bar 157,5-159,5 (154,5-162,5)	1190-1200*	LDA 900	0,7 bar 165,0-169,0 (162,0-172,0)	100	140,0-160,0 (136,0-164,0)	1150	10,7+0,1
LDA 600	0,7 bar 167,0-173,0 (164,0-176,0)		LDA 500	0 bar 139,0-141,0 (136,0-144,0)			600	11,4+0,1
							900	10,8+0,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 k

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel · diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 8 P..LS 3807 + RQV..PA 545	0	0,40 0,47	10,3-10,4 10,4-10,5 10,9-11,1

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 k 1

2. Edition

En

PE 8 P 120 A 320 LS 3807 RQV 300-1150 PA 545-1

supersedes 5.83

company Daimler-Benz

engine OM 422 LA

276 kW

Komb.-Nr. 0 401 848 754

1-8-7-2-6-3-5-4- je $45^\circ \pm 0,5^\circ$ ($\pm 0,75^\circ$)
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $4,0-4,1$
(3,95-4,15) mm (from BDC) cyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,0+0,1	18,2-18,4	0,5(0,9)			
300	4,8-5,0	1,2-2,0	0,8(1,2)			
750		C, Sp. 4 u. 5	(1,2)			
500						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 17	100	min. 6,5	300	1,6-1,8
ca. 55	11,0	1190-1200					300	4,8-5,0	800	6,0-6,2
	4,0	1235-1265					330-400=2,0		1200	8,6-8,8
	1400	0-1,0							1270	10,0

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5) Control rod travel	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 1150	0,7 bar 182,0-184,0 (179,0-187,0)	1190-1200*	LDA 750	0,7 bar 195,0-198,0 (192,0-201,0)	100	140,0-160,0 (136,0-164,0)	1150	12,0+0,1
			LDA 500	0 bar 141,0-143,0 (138,0-146,0)			750	12,4+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 k 1

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	diminution difference mm (1)
PE 8 P..LS 3807 + RQV..PA 545-1	0	0,40 0,55	10,5-10,7 11,1-11,4 12,2-12,6

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 14,6 g 2

2. Edition

En

PE 8 P 120 A 320 LS 3807 RQ 300/1150 PA 546-1

supersedes 9.83

company Daimler-Benz

engine OM 422 LA

276 kW

Komb.-Nr. 0 401 848 753

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$
 Values only apply to test nozzle-and-holder
 assembly 1 688 901 019 and fuel-injection test
 tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0-4,1

(3,95-4,15)

mm (from BDC) Zyl. 8

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	12,0+0,1	18,2-18,4	0,5(0,9)			
300	4,8-5,0	1,2-2,0	0,8(1,2)			
750						
500	-	C, Sp. 4 u. 5	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	19,2-20,8	600	20,0	11,0	1195-1210	300	5,5	100	min.6,5	1150	12,0-12,1
	VH= max. 46°			4,0	1235-1265			300	5,4-5,6	750	12,4-12,5
				1350	0-1,5			365-415	=2,0	900	12,2-12,4

Torque-control travel
on flyweight assembly dimension a = 0,23 mm

Speed regulation: At

1195-1210 min

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
LDA 1150	0,7 bar 182,0-184,0 (179,0-187,0)	-		LDA 750	0,7 bar 195,0-198,0 (192,0-201,0)	100	140,0-160,0 (136,0-164,0)
				LDA 500	0 bar 141,0-143,0 (138,0-146,0)		

Checking values in brackets

4.85

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D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 g 2

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement		Control rod travel - diminution difference (1)
	Gauge pressure = bar	Gauge pressure = bar	mm	
PE 8 P..LS 3807 + RQ..PA 546-1	0	0,40 0,55		10,5-10,7 11,1-11,2 12,2-12,4

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 K 4

1. Edition

En

PE 8 P 120 A 320 LS 3807 -10 RQV 300-1150 PA 545

1-8-7-2-6-3-5-4 je 45 ° $\pm 0,5$ ($\pm 0,75$ °)

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

companion Daimler-Benz

engine OM 422 A

243 kW (330PS)

Komb.-Nr. 0 401 848 732

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1
(3,95-4,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	10,7+0,1	15,7-15,9	0,5(0,9)			
300	5,2-5,4	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 17	100	min. 6,7	300	1,6-1,8
ca. 54	9,7 4,0 1350	1190-1200 1235-1265 0 - 1,0					300	5,0-5,2	800	6,0-6,2
							355-405=2,0		1200	8,1-8,3
									1260	9,9

Torque control travel a = 0,5 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1150	0,7 bar 157,5-159,5 (154,5-162,5)	1190-1200*	LDA 750	0,7 bar 173,5-175,5 (170,5-178,5)	100	140,0-163,0 (136,0-164,0)	1150	10,7+0,1
			LDA 500	0 bar 139,0-141,0 (136,0-144,0)			750	11,0+0,2
							900	10,9+0,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 k 4

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 8 P..LS 3807 -10 + RQV..PA 545	0	0,40 0,47	10,3-10,4 10,4-10,5 10,9-11,1

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 k 3

1. Edition

En

PE 8 P 120 A 320 LS 3807-10 RQV 300-1150 PA 545-3

Komb.-Nr. 0 401 848 763

1-8-7-2-6-3-5-4 je 45 ° \pm 0,5 ° (\pm 0,75 °)

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067

supersedes

Daimler-Benz

company OM 422 LA

engine 276 KW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1 mm (from BDC) Zyl. 8
(3,95-4,15)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	11,1+0,1	16,7-16,9	0,5 (0,9)			
300	5,1-5,3	1,2-2,0	0,8 (1,2)			
750	-	C, Sp. 4 u. 5	0,8 (1,2)			
500						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1190	15,2-17,8	-	-	-	ca. 20	100	min. 6,8	300	6-1,8
ca. 56	10,1	1190-1200					300	5,1-5,3	800	6,0-6,2
	4,0	1250-1280					375-445	= 2,0	1200	8,6-8,8
	400	0 - 1,0							1270	10,0

Torque control travel a = 0,50 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
LDA	0,7 bar	1190-1200 *	LDA	0,7 bar			1150	11,1+0,1	
1150	167,0-169,0 (164,0-172,0)		750	181,0-184,0 (178,0-187,0)			750	11,6+0,2	
			500	140,0-142,0 (137,0-145,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2
4.85
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F1

D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 k 3 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 8 P.. LS 3807-10 +RQV .. PA 545-3	0	0,41 0,49	10,3 -10,4 10,6 -10,7 11,2 -11,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 14,6 q 3

1. Edition

En

PE 8 P 120 A 320 LS 3807-10 RQ 300/1150 PA 546-4

Komb.-Nr. 0 401 848 760

1-8-7-2-6-3-5-4 je 45 ° ± 0,5 ° (± 0,75 °)

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes
company: Daimler-Benz
engine: OM 422 A
243 kW

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDE) 7yl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	10,5+0,1	15,3-15,5	0,5 (0,9)			
300	5,2-5,4	1,2-1,8	0,8 (1,2)			
750	-	C, Sp. 4 u. 5	0,8 (1,1)			
500						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	19,2-20,8	600	20,0	9,5 4,0 1350	1195-1210 1250-1280 0 - 1,0	300	5,3	100 300 365-415 = 2,0	min.6,9 5,2-5,4 15 = 2,0	1150 750	10,5-10,6 11,1-11,3
VH=	max. 46°										

Torque-control travel
on flyweight assembly dimension a = 0,30 mmSpeed regulation: At 1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3		rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm Control rod travel 7
LDA 1150	0,7 bar 153,0-155,0 (150,0-158,0)		-	LDA 750	0,7 bar 171,0-174,0 (168,0-177,0)	100	140,0-160,0 (136,0-164,0)
				LDA 500	0 bar 139,0-141,0 (136,0-144,0)		

Checking values in brackets

4.85

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D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 q 3

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	diminution difference mm (1)
PE 8P..LS 3807-10 +RQ .. PA 546-4	0	0,45 0,50	10,3-10,5 10,4-10,5 10,8-11,0

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MB 14,6 q 2

40

1. Edition

En

PE 8 P 120 A 320 LS 3807-10 RQ 300/1150 PA 546-5

Komb.-Nr. 0 401 848 761

1-8-7-2-3-5-4 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes -

company: Daimler-Benz

engine: OM 422 LA

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC) Zyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,1+0,1	16,7-16,9	0,5(0,9)			
300	5,4-5,6	1,2-2,0	0,8 (1,2)			
750	-	C, Sp. 4 u. 5	0,8 (1,2)			
500						

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 4		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
600	19,2-20,8	600	20,0	10,1	1195-1210	300	5,5	100	min. 6,5	1150	11,1-11,2
				4,0	1255-1285			300	5,4-5,6	750	11,6-11,8
VH =	max. 46 °			1350	0 - 1,5			365-415	= 2,0		

Torque-control travel
on flyweight assembly dimension a = 0,2 mmSpeed regulation: At 1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		Control rod travel mm 7
LDA 1150	0,7 bar 167,0-169,0 (164,0-172,0)	-		LDA 750	0,7 bar 181,0-184,0 (178,0-187,0)	100	140,0-160,0 (136,0-164,0)
				LDA 500	0 bar 140,0-142,0 (137,0-145,0)		

Checking values in brackets

4.85

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F5

D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 q 2 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
PE 8 P..LS 3807-10 + RQ.. PA 546-5	0	0,41 0,49	10,5-10,7 10,8-10,9 11.4-11,6

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 11,0 e

5. Edition

En

PE 6 P 120 A 320 LS 3810 RQV 350-1150 PA 553

supersedes 9.83

company: Daimler-Benz

OM 421 A

engine: 198 kW (269 PS)

Komb.-Nr. 0 401 846 736

1 - 6 - 3 - 5 - 2 - 4
 0 - 75 - 120 - 195 - 240 - 315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $4,0-4,1$
 (3,95-4,15) mm (from BDC) Zyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1130	11,5+0,1	17,2-17,4	0,5(0,9)			
350	4,6-4,8	1,5-2,0	0,8(1,2)			

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1180	15,2-17,8	-	-	-	ca. 12	100	min.6,5	300	1,0-1,2
ca. 64	10,5	1170-1180					350	4,6-4,8	580	3,6-3,8
	4,0	1245-1275							870	5,4-5,6
	1400	0-1,0				385-505 (3a)			1150	8,2

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics (5a) high idle speed (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5)	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1130	172,0-174,0 (169,0-177,0)	1170-1180*	-	-	100	160,0-180,0 (156,0-184,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 14,6 f 2

1. Edition

En

PE 8 P 120 A 320 LS 3811-10 RQ 300/1150 PA 556

Komb.-Nr. 0 401 848 734

1-8-7-2-6-3-5-4 je 45 ° $\pm 0,50$ ($\pm 0,75$ °)

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067

supersedes

company Daimler-Benz

engine: OM 422 A

243 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

 Port closing at prestroke $\overset{4,0-4,1}{(3,95-4,15)}$ mm (from BDC) Zyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	10,4+0,	16,2-16,4	0,5(0,8)			
300	5,0-5,2	1,4-2,2	0,8(1,2)			
600	-	C, Sp. 4 + 5	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check 1		Full-load speed regulation Setting point 2				Idle speed regulation Setting point 3				Torque control 4	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	19,1-20,8	600	20,0	9,4	1195-1210	300	4,6	100	min. 6,2	-	-
	VH = max. 46 °			4,0	1215-1245			300	4,5-4,7		
								320-360	= 2,0		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) 2		Control rod stop 3a	Fuel delivery characteristics 3b		Starting fuel delivery Idle speed 6	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1150	162,0-164,0 (159,0-167,0)	-	600	152,0-158,0 (149,0-161,0)	100	125,0-145,0 (121,0-149,0)

Checking values in brackets

3.85

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②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 14,6 f 1

1. Edition

En

PE 8 P 120 A 320 LS 3811-10 RQ 300/1150 PA 556-1

Komb.-Nr. 0 401 848 759

1-8-7-2-6-3-5-4 je $45^\circ \pm 0,5^\circ$ ($\pm 0,75^\circ$)

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company: Daimler-Benz

engine: OM 422 A

243 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0-4,1
(3,95-4,15)

mm (from BDC) Zyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	10,4+0,1	16,0-16,2	0,5 (0,8)			
300	5,0-5,2	1,4-2,2	0,8 (1,2)			
600	-	C, Sp. 4 u. 5	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10 rev/min 9		Torque control rev/min 11 Control rod travel mm 12	
600	19,1-20,8	600	20,0	9,4 4,0	1195-1210 1215-1245	300	4,6	100 300 320-360	min. 6,2 4,5-4,7 = 2,0	-	-
VH = max. 46°											

Torque-control travel
on flyweight assembly dimension a = mmSpeed regulation: At 1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		cm ³ /1000 strokes, <input type="text"/> mm 7
1150	160,0-162,0 (157,0-165,0)			600	150,0-156,0 (147,0-159,0)	100	125,0-145,0 (121,0-149,0)

Checking values in brackets

3.85

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Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 14,6 r

1. Edition

En

PE 8 P 110 A 320 LS 3813-10 RQ 300/1150 PA 187-3

Komb.-Nr. 0 401 848 764

1-8-7-2-6-3-5-4 je 45 ° ± 0,5 ° (± 0,75 °)

supersedes -

company:

Daimler-Benz
OM 422

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0-4,1
(3,95-4,15)

mm (from BD Zyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,7+0,1	13,3-13,5	0,4(0,8)			
300	7,9-8,1	1,5-2,1	0,4(0,7)			
600	-	C, Sp. 4 u. 5	0,8 (1,1)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
650	13,0-14,0	650	13,5	10,7 4,0 1350	1195-1210 1230-1260 0 - 1,5	300	8,1	100 300 420-460 550	min. 10,2 8,0-8,2 = 2,0 max. 1,8	-	-

Torque-control travel
on flyweight assembly dimension a = mm

1195-1210 min-1

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1150	132,5-134,5 (130,0-137,0)	600		600	109,5-115,5 (106,5-118,5)	100	130,0-150,0 (126,0-154,0)

Checking values in brackets

3.85

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Test ISO 4113

F10

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 10,0 c

1. Edition

En

PES 5 P 120 A 720 LS 7101 RQ 300/1050 PA 690

Komb.-Nr. 0 402 745 800

1-3-5-4-2 je $72^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 0 67

supersedes-

company: Daimler-Benz

engine: OM 429 LA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (5,15-5,35) mm (from BDC) Zyl. 5; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	13,8+0,1	20,3-20,5	0,5(0,9)			
300	6,0-6,2	1,2-2,0	0,8(1,2)			
900	-	C, Sp. 4 u. 5	0,8(1,2)			
500						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Control rod travel mm 2		Setting point		Test specifications		Setting point		Test specifications		Control rod travel	
rev/min 1	mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	19,2-20,8	600	20,0	12,8	1095-1110	300	6,1	100	min.7,7	-	-
VH =	max. 46°			4,0	1145-1185			300	6,0-6,2		
				1300	0-1,5			380-420	= 2,0		

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation: At $1095-1110 \text{ min}^{-1}$ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
LDA 1050	0,7 bar 203,0-205,0 (200,0-208,0)	-		LDA 900	0,7 bar 206,0-210,0 (203,0-213,0)	100	160,0-180,0 (156,0-184,0)
LDA 600	0,7 bar 199,0-203,0 (196,0-206,0)			LDA 500	0 bar 155,0-157,0 (152,0-160,0)		

Checking values in brackets

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D. Adjustment Test for Manifold Pressure Compensator

MB 10,0 c

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
PES 5 P..LS 7101 +RQ..PA 690	0,70	0	13,8-13,9	
		0,35	11,8-12,0	
		0,24	13,3-13,4	
			12,2-12,5	

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications, Fuel Injection Pumps and Governors

WPP 001/4 MB 11,0 i 2

1. Edition

En

PE 6 P 110 A 320 LS 3805 -10 RQV 300-1130 PA 324-6
Komb.-Nr. 0 401 846 756

1- 6- 3 - 5 - 2 - 4

0-75-120-195-240-315° ± 0,5° (± 0,75 °)

supersedes

Daimler-Benz

OM 421

engine 148 kW (201 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 4,0-4,1 \\ (3,95-4,15) \end{matrix}$ mm (from BDC) Zyl. 6, RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,6+0,1	12,7-12,9	0,4 (0,8)			
300	8,7-8,9	1,6-2,2	0,4 (0,7)			
600	-	C, Sp. 4 u. 5	0,6 (0,8)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 23	100	min. 10,4	300	1,6-1,8
ca. 55	11,6 4,0 1500	1190-1200 1240-1270 0 - 1,0					300	8,7-8,9	800	5,8-6,2
							420-480 = 2,0		1200	8,2-8,4
									1260	10,0

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
1150	127,0-129,0 (124,0-132,0)	1190 - 1200	600	104,5-108,5 (101,5-111,5)	100	130,0-150,0 (126,0-154,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2
4,85
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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 MWM 3,9 b 1

1. Edition

En

PES 4 A 80 D 320 RS 1282-1

RS 350/1500 A 2 B 2073-2 R

Komb.-Nr. 9 400 085 243

supersedes

company MWM

engine D 229-4

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,65-2,75}{(2,60-2,80)}$ mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1500	9,2-9,3	5,7-5,8	0,25 (0,4)			
350	5,9-6,1	0,8-1,1	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	FH ca. 32	350	6,0	1500	9,2-9,3
	X =						300	6,6-7,2	500	10,9-11,0
FH max.							400	4,8-5,6	900	10,5-10,7
VH ca. 64	8,3	1540-1550					550	max. 3,5	1200	9,8-10,1
2a	4,0	1585-1615					1450	max. 2,0		
	1700	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery idle		5 4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	3	4	5	6	7	8	9
500	57,0-58,0 (55,5-59,5)	1540-1550*	500	500	62,0-64,0 (60,0-66,0)	100	19,0-21,0 mm RW	-	-
			900	900	65,0-67,0 (63,0-69,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

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F14

F14

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 1 g 17

1. Edition

En

PES 4 A 80 D 410/3 RS 1300

RSV 325-1175 A 8 C 657-1 L

Komb.-Nr. 0 400 464 129

supersedes

company KHD

engine F 4 L 912

Schlepper DX 3.70

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 1,9-2,0 \\ (1,85-2,05) \end{matrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1175	10,8+0,1	5,8-5,9	0,25 (0,4)			
325	8,4-8,6	1,1-1,7	0,2 (0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 17	325	8,0	1175	10,8-10,9
	X = 4,0						325	8,4-8,6	500	11,6-11,7
ca. 51	9,8	1215-1225					445-505	=2,0	1025	11,2-11,4
②a	4,0	1260-1290								
	1400	0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min				Idle		Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	rev/min 9	
1175	58,0-59,0 (56,5-60,5)	1215-1225*	800	56,0-58,0 (54,0-60,0)	100	120,0-130,0 (117,0-138,0) =19,5-21,0 mm RW	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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F15

645

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 VMA 14,9 a

1. Edition

En

PES 8 A 90 D 410 LS 2373 RSV 250-750 A 1 B 623 L
Komb.-Nr. 0 400 878 008
1-8-7-2-6-5-4-3 je $45^\circ \pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes

company **Motori VM**
engine V 130/8

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,3-3,4$ mm (from BDC)
(3,25-3,45)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
750	10,5+0,1	9,0-9,1	0,3			
250	6,4-6,6	1,0-1,6	0,25			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 18	250	6,5	750	10,5-10,6
	$\lambda = 4,0$						250	6,4-6,6	450	10,5-10,6
ca. 47	9,5	790-800					255-315	2,0	300	11,8-12,4
2a	4,0	800-830						**		
	965	0,3-1,7								

The numbers denote the sequence of the tests

** Set idle auxiliary-spring at 2 mm control-rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
750	89,5-90,5	790-800*		-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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4.85

F16

F16

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VMA 4,9 a

1. Edition

En

PES 4 A 90 D 410 RS 2510

ER/RSV 250-900 A1 B1029L

supersedes -

company Motori VM

Komb.-Nr. 0 400 874 215

engine VM 114

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,30-3,40
(3,25-3,45) RW 9 mm (from BDC) RW=7,5-10,5 mm

Port closing difference
between control-rod
travel 9 mm and max.
6,0-7,5° camshaft

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
880	10,5±0,1	6,6 - 6,7	0,3(0,45)			
250	8,0-8,5	0,6 - 1,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 24	250	5,5	880	10,5-10,6
	x = 3,0						100	min.19	450	10,5-10,7
							250	5,9-6,1	300	11,7-12,3
ca.48	9,5	920-930					330 - 360	=2,0		
2a	4,0	955-985					450	0 - 1		
	1100	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop		(6) Rotational-speed limitat.		(3a) Fuel delivery characteristics		Starting fuel delivery Idle (5)		(4a) Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
880	66,0 - 67,0 (64,0 - 69,0)	920-930 *	-	-	-	-	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VMA 7,3 a

1. Edition

En

PES 6 A 90 D 410 RS 2511

ER/RSV 250-900 A1 B1029L

supersedes

company Motori VM

Komb.-Nr. 0 400 876 262

engine VM 116

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,30-3,40
(3,25-3,45) mm (from BDG) RW=7,5-10,5 mm

Port closing difference
between control-rod
travel 9 mm and max.
6,0-7,5° camshaft

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
880	10,5+0,1	6,6 - 6,7	0,3(0,45)			
250	8,4-8,6	0,8 - 1,4	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4			Lower rated speed Control lever deflection in degrees 7			3 Torque control Control rod travel mm 11	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	
loose	800	0,3-1,7	-	-	-	ca. 17	250	8,0	880	10,5-10,6
	x = 3,0						100	min. 19,5	450	10,5-10,7
							250	8,4-8,6	300	11,7-12,3
							415 - 475	= 2,0		
ca. 44	9,5	920-930								
2a	4,0	955-985								
	1100	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		rev/min 8	
880	66,0 - 67,0 (64,0 - 69,0)	920-930 *	-	-	-	-	-	250	8,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 16,0 d

9. Edition

En

Testoil-ISO 4113

PE10A90D520/5 LS 2515

RQV 250-1250 AB993DR

supersedes 5.85

RQ 250/1250 AB832DR ./.

company MAN

RQ 250/1250 AB992DR ./.

engine: D 2530 MF

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2

0 - 45 - 72 - 117 - 144 - 189 - 216 - 261 - 288 - 333° $\pm 0,5^\circ (0,75^\circ)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\overset{1,50-1,60}{(1,45-1,65)}$ mm (from BDC) Zyl. 10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	11,5-11,6	10,2 - 10,3	0,3(0,45)	11,5-11,6	10,3 - 10,4	
250	7,4-7,6	0,9 - 1,5	0,2(0,4)	7,4-7,6	0,9 - 1,5	
800/500	- - -	C, 4-5 -	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in
Testoil-ISO 4113

B. Governor Settings

RQV..993 DR

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1275	14,4-17,4	-	-	-	ca. 13	100	min. 7,2	200	0,5-1,2
- - -	- - -	- - -	-	-	-	-	250	5,6-5,8	700	4,4-4,8
ca. 48	10,5	1290-1300	-	-	-	-	310-370	= 2,0	270	8,3
- - -	4,0	1365-1395	-	-	-	-	450	0 - 1		
- - -	1450	0 - 1,0	-	-	-	3a				

Torque control travel a = 0,6+0,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	102,5-103,5 (100,5-105,5)	1290 - 1300*	800	95,5- 98,5 (93,5-100,5)	100	135,0-145,0	1250	11,5+0,1
					250	7,0 mm RW	900	11,9+0,3
			500	90,0- 94,0 (88,0- 96,0)	100-170 (80-190)		500	12,3+0,1
								./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

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B. Governor Settings

MAN 16,0 d
RQ..832 DR

- 2 -

(2)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
		①		④		⑤		③			
rev/min	Control rod travel mm	Setting point	Control rod travel mm	Control rod travel mm	rev/min	Setting point	Control rod travel mm	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	10,5	1295-1310	250	6,1	100	min.7,6	-	-
				4,0	1345-1375			250	6,0-6,2		
				1500	0 - 1,0			360-420	=2,0		
								500	0 - 1		

Torque-control travel on flyweight assembly dimension a = 0 mm Speed regulation At 1295-1310 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
		②		③a		③b	
rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	Control rod travel mm
1250	101,5 - 102,5 (99,5 - 104,5)			500	78,0 - 86,0 (76,0 - 88,0)	100	129,25 - 139,25
						250	7 mm RW

Checking values in brackets

B. Governor Settings

RQ..992 DR

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
		①		④		⑤		③			
rev/min	Control rod travel mm	Setting point	Control rod travel mm	Control rod travel mm	rev/min	Setting point	Control rod travel mm	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	10,5	1295-1310	250	6,0	100	min.7,5	1250	11,5-11,6
				4,0	1365-1395			250	5,9-6,1	1000	11,8-12,0
				1500	0 - 1,0			360-400	=2,0	600	12,2-12,4
								500	0 - 1		

Torque-control travel on flyweight assembly dimension a = 0,25 mm Speed regulation At 1295-1310 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
		②		③a		③b	
rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	Control rod travel mm
1250	102,5 - 103,5 (100,5 - 105,5)			800	95,5 - 98,5 (93,5 - 100,5)	100	135,0-145,0 (132,0-148,0) = 18,3-19,3 mm RW
				500	90,0 - 94,0 (88,0 - 96,0)	250	7,0 mm RW

En Checking values in brackets

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FOR 6,6 a 1

En

1. Edition

PES 6 A 95 D 410 RS 2688

RQV 350-1300 AB 1208 L

supersedes -

Komb.-Nr. 9 400 085 232

company: Ford

engine: 6,6 l TC

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,15-3,25$
(3,10-3,30) mm (from BDC) ; RW = 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	12,1-0,1	8,6 - 8,8	0,35 (0,6)			
350	6,9-7,1	1,0 - 1,4	0,35 (0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1345	15,2-17,8	-	-	-	ca. 18	100	min.10,0	300	1,3-1,5
ca. 62	11,1	1340-1350					350	6,9-7,1	500	3,5-3,7
	4,0	1460-1490					670-730	=2,0	1000	5,9-6,1
	1600	0 - 1,0				400-500 (3a)			1345	8,6

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1300	0,5 bar 86,0-88,0 (84,0-90,0)	1340 - 1350*	LDA 900	0,5 bar 86,0-89,0 (83,5-91,5)	100	115,0-125,0 = 20,0- 21,0 mm RW	1300	12,1+0,1
LDA 600	0,5 bar 83,0-86,0 (80,5-88,5)		LDA 600	0 bar 57,0-59,0 (55,0-61,0)			600	12,8+0,1
							800	12,6+0,2
							900	12,4+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2
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D. Adjustment Test for Manifold Pressure Compensator

FOR 6,6 a 1

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PES6A..RS 2688 +RQV..AB 1208 L	0,50	0 0,40 0,25	12,8 - 12,9 10,6 - 10,7 12,2 - 12,3 11,0 - 11,2

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 6,2 0

1. Edition

En

PES 6 A 95 D 320 RS 2693 RSV 300-1300 A 2 B2195 R
Komb.-Nr. 0 400 876 327
Values apply to fuel-injection test tubing 1 680 750 015

supersedes DAF
company DNT 620
engine 130 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,5+0,1	7,6-7,8	0,35(0,45)			
300	6,1-6,3	0,7-1,1	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 17	300	5,7	1290	11,0-11,1
	X = 3,75						300	6,1-6,3	500	11,6-11,7
ca. 49	10,0	1330-1340					670-730=2,0		975	11,4-11,5
2a	4,0	1430-1460							1015	11,1-11,3
	1590	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 850	0,7 bar 76,0-78,0 (74,0-80,0)	330-1340*	LDA 1290	0,7 bar 75,5-78,5 (73,0-81,0)	100	130,0-140,0 (127,0-143,0) =19,5-21,0 mm RW	300	6,2	
			LDA 600	0 bar 65,0-67,0 (63,0-69,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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F23

F23

D. Adjustment Test for Manifold Pressure Compensator

DAF 6,2 0

- 2 -

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 A..RS 2693 + RSV..A 2 B 2195 R	0,70	0 0,25	11,5-11,6 11,2-11,4 11,4-11,5

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ①A and Governors

40

WPP 001/4 DAF 11,6 k 12

1. Edition

En

PE 6 P 110 A 320 RS 372/Y

RSV 250-1100 P 5/458 R

Komb.-Nr. 0 401 876 235/Y

supersedes

company DAF

engine DKA 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,1-11,2	11,5-11,7	0,4(0,75)			
250	6,6-6,8	0,7-1,1	0,4(0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm/rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 21	250	6,2	400	11,3-11,4
	X =						250	6,6-6,8	300	11,5-12,0
ca. 51	10,1	1140-1150					640-700	= 2,0		
②a	4,0	1275-1305								
	1425	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to ... rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	Control rod travel mm 9
850	114,5-116,5 (111,5-119,5)	1140-1150*	-	-	100	245,0-285,0 RW = 19,5 - 21,0 mm	0 250	6,7	

Checking values in brackets

* 1 mm less control rod travel than col 2

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05.85

G1

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 AEC 12,0 a 1

2. Edition

En

PE 6 P 120 A 320 RS 298 Z RQV 250-1100 PA 277 R
Komb.-Nr. 0 401 846 389

supersedes 7.84

company: AEC

engine: TL 12/10

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $3,4-3,5$
(3.35-3.55) mm (from BDC) RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	14,0+0,1	20,0-20,2	0,5(0,9)			
250	7,7-7,9	1,6-2,0	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev./min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1100	15,2-17,8	-	-	-	ca. 34	100	min. 9,2	200	0,9-1,2
ca. 61	13,0	1140-1150					250	7,7-7,9	500	3,7-3,9
	4,0	1210-1240					420-480	= 2,0	800	5,2-5,6
	1350	0-1,0							1100	7,9

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5) Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1100	0,7 bar 200,0-202,0 (197,0-205,0)	1140-1150*	LDA 1100	0 bar 176,0-180,0 (174,0-182,0)	- 250	- 16,0-20,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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D. Adjustment Test for Manifold Pressure Compensator

AEC 12,0 a 1

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P..RS 298 Z + RQV..PA 277 R	0,70	0 0,50 0,45	14,0-14,1 12,4-12,5 13,5-13,6 12,9-13,1

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 STE 10,0 b

8. Edition

En

PE 6 P 110 A 721 RS 369 RQ 300/1300 PA 412 DR
Komb.-Nr. 0 401 856 142

supersedes 5.84
company Steyr
engine WD 615.60

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$ mm (from BDC) RW=9,0-12,0 mm
(2,75-2,95)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	12,5+0,1	11,7-11,9	0,4(0,75)			
250	9,3-9,5	1,8-2,4	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10 rev/min 9		Torque control rev/min 11	
	Control rod travel mm 2		Control rod travel mm 4				Control rod travel mm 8		Control rod travel mm 10		Control rod travel mm 12
600	15,6-16,4	600	16,0	11,5 4,0 1550	1345-1360 1405-1435 0-1,0	300	6,0	100 300 390-430	min.7,4 5,9-6,1 =2,0	300 700 900 1100	12,5-12,6 13,2-13,3 12,9-13,1 12,6-12,7

Torque-control travel on flyweight assembly dimension a = 0,35 mm Speed regulation: At 1345-1360 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		Control rod travel mm 7
LDA 1300	0,7 bar 117,0-119,0 (114,0-122,0)	-		LDA 700	0,7 bar 107,0-111,0 (104,0-114,0)	100	115,0-135,0
				LDA 700	0 bar 100,0-102,0 (97,0-105,0)		

Checking values in brackets

5.85

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G4

G4

D. Adjustment Test for Manifold Pressure Compensator

STE 10,0 b

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P..RS 369 + RQ..PA 412 DR	0,70	0 0,31 0,27	13,2-13,3 12,8-12,9 13,1-13,2 12,9-13,1

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 i 3

En 2. Edition

PE 6 P 110 A 320 RS 372/W

RSV 250-1100 P 5/458 R

supersedes -

Komb.-Nr. 0 401 876 235/W

company

DAF

engine

DKT 1160 206 kW

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC bei RW = 9,0 - 12,0 mm.

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,8+0,1	15,3 - 15,6	0,4 (0,75)			
250	7,0-7,2	1,0 - 1,4	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 21	250	6,6	400	13,0-13,1
ca. 51	11,8	1140-1150					250	7,0-7,2	300	13,2-13,7
2a	4,0	1275-1305					710-770	= 2,0		
	1425	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limits		3a Fuel delivery characteristics		Starting fuel delivery idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min		rev/min		rev/min		rev/min	
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	Control rod travel mm 9
LDA	0,7 bar	1140-1150*	LDA	0 bar	100	245,0-285,0	250	7,1	
850	152,5-155,5 (150,0-158,0)		600	127,5 - 130,5 (124,0 - 134,0)		RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col 2

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G6

D. Adjustment Test for Manifold Pressure Compensator

DAF 11:6 i 3

- 2 -

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P .. RS 372/W + RSV .. P 5/485 R	0,70		12,8 - 12,9
		0,35	12,5 - 12,6
		0	11,4 - 11,5

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 i 6
2.Edition

En

PE 6 P 110 A 320 RS 372/Z RSV 250 - 1100 P 5/458 R
Komb.-Nr. 0 401 876 235/Z

supersedes
company DAF
engine DKT 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,80-2,90
(2,75-2,95) mm (from BDC) bei RW = 9,0 - 12,0 mm.

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,3+0,1	14,3 - 14,6	0,4 (0,75)			
250	6,6-6,8	0,7 - 1,1	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca.21	250	5,2	400	12,5-12,6
	X =						250	6,6-6,8	300	12,7-13,2
ca.51	11,3	1140-1150					640-700	= 2,0		
2a	4,0	1275-1305								
	1425	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop test oil temp. 40°C (104°F)		6 Rotational speed limit Note: changed to ... rev/min		3a Fuel delivery characteristics		Starting fuel delivery 10:2		5 Idle stop	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	rev/min 9	Control rod travel mm 9
LDA	0,70 bar	1140-1150*	LDA	0 bar	100	245,0-285,0	250		6,7
850	142,5 - 145,5 (140,0 - 148,0)		600	127,5 - 130,5 (124,0 - 134,0)		RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

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G8

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 i 6

- 2 -

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P .. RS 372/Z + RSV .. P 5/458 R	0,70		12,3 - 12,4
		0,30	12,0 - 12,1
		0,26	11,6 - 11,8
		0	11,4 - 11,5

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 k 9
1. Edition

En

PE 6 P 120 A 320 RS 372-1/X RSV 250 - 1000 P 5/458
Komb.-Nr. 0 401 876 261/X

supersedes
company DAF
engine DKX 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,80-2,90
(2,75-2,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,4+0,1	20,5 - 20,9	0,5 (0,90)			
250	6,2-6,4	1,1 - 1,5	0,8 (0,95)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min: Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-rod deflection in degrees 7			3 Torque control Control rod travel mm	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	Control rod travel mm 11
800	0,3-1,0		-	-	-	ca.20	250	5,8	400	11,6 - 11,7
X =							250	6,2-6,4	300	11,8 - 12,3
10,4	1035-1045						620-680	= 2,0		
4,0	1155-1185									
1325	0,3-1,7									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		rev/min 8	
LDA	0,7 bar	1035-1045*	LDA	0 bar	100	320,0-360,0	250	6,3	
850	205,0 - 209,0 (202,0-212,0)		600	139,0 - 143,0 (135,0 - 147,0)		RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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G10

210

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 k 9

- 2 -

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PE6P .. RS 372-1 + RSV .. P 5/458	0,70	0,37 0,30 0	11,4 - 11,5 11,0 - 11,1 10,3 - 10,7 10,0 - 10,1

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 DAF 11,6 k 11

1. Edition

En

PE 6 P 110 A 320 RS 372-1/X RSV 250-1100 P 5/458-1

Komb.-Nr. 0 401 876 254/X

supersedes **DAF**
company **DKT 1160 A**

engine
Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,80-2,90$
 $(2,75-2,95)$ mm (from 800 bsi RW = 9,0 - 12,0 mm.

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,3+0,1	14,2 - 14,5	0,4 (0,75)			
250	6,6-6,8	0,7 - 1,1	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel min rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 18	250	6,2	400	12,5-12,6
	X =						250	6,6-6,8	300	12,7-13,2
ca. 48	11,3	1140-1150					620-690	= 2,0		
2a	4,0	1200-1230								
	1350	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA	0,7 bar	1140-1150*	LDA	0 bar	100	245,0-285,0	250	6,7	
850	141,5 - 144,5 (139,0 - 147,0)		600	127,5 - 130,5 (124,0 - 134,0)		RW = 19,0 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 k 11

-2-

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P .. RS 372-1 + RSV .. P 5/458-1	0,70		12,3 - 12,4
		0,30	12,0 - 12,1
		0,26	11,6 - 11,8
		0	11,4 - 11,5

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 k 13

1. Edition

En

PE 6 P 110 A 320 RS 372-1/Y

RSV 250-1100 P 5/458-1

supersedes

company DAF

engine DKA 1160

Komb.-Nr. 0 401 876 254/Y

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,1-11,2	11,5-11,7	0,4(0,75)			
250	6,6-6,8	0,7-1,1	0,4(0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 21	250	6,2	400	11,3-11,4
	X =						250	6,6-6,8	300	11,5-12,0
ca. 51	10,1	1140-1150					640-700	= 2,0		
2a	4,0	1275-1305								
	1425	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to ...)				Idle			
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
850	114,5-116,5 (111,5-119,5)	1140-1150*	-	-	-	100	245,0-285 RW = 19,5 - 21,0 mm	0 250	6,7

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

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05.85

G14

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 k 15
1. Edition

En

PE 6 P 110 A 320 RS 372-1/Z RSV 250 - 1100 P 5/458-1
Komb.-Nr. 0 401 876 254/Z

supersedes
company DAF
DKT 1160

engine
Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC) bei RW = 9,0 - 12,0 mm.

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,8+0,1	15,3 - 15,6	0,4 (0,75)			
250	7,0-7,2	1,0 - 1,4	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Lower rated speed Control-lever deflection in degrees rev/min 7 8 9			3 Torque control rev/min Control rod travel mm 10 11	
	Control rod travel mm 2	Control rod travel mm rev/min 3								
loose	800	0,3-1,0	-	-	-	ca.21	250	6,6	400	13,0-13,1
	X =						250	7,0-7,2	300	13,2-13,7
ca.51	11,8	1140-1150					710-770	= 2,0		
2a	4,0	1275-1305								
	1425	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to) rev/min 3		3a Fuel delivery characteristics rev/min cm ³ /1000 strokes 4 5		Starting fuel delivery Idle rev/min cm ³ /1000 strokes 6 7		4a Idle stop rev/min Control rod travel mm 8 9	
LDA	0,7 bar	1140-1150*	LDA	0 bar	100	245,0-285,0	0 250	7,1	
850	152,5 - 155,5 (150,0 - 158,0)		600	127,5 - 130,5 (124,0 - 134,0)		RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col 2

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Testoil-SO 4-113

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 k 5

- 2 -

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P .. RS 372-1 + RSV .. P 5/458-1	0,70		12,8 - 12,9
		0,355	12,5 - 12,6
		0	11,4 - 11,5

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 11,6 m

4. Edition

En

Testoil-ISO 4113

PE 6 P 100 A 320 RS 384

RQ 225/1100 PA 450/2 DR

supersedes 11.82

DAF

company: DKL 1160

engine:

 1 - 5 - 3 - 6 - 2 - 4 $\pm 0,50^\circ$
 0 - 60 - 120 - 180 - 240 - 300 $(\pm 0,75^\circ)$

Komb.-Nr. 0 401 846 412

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,9-12,0	11,5 - 11,7	0,35(0,6)			
225	7,3-7,5	0,8-1,4	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	0,1	1145-1060	225	6,0	100	min. 7,6	1050	11,1-11,2
								225	7,3-7,5	600	11,9-12,0
1300	0,3- 1,0			4,0	1175-1205			325-365	= 2,0	825	11,7-11,9
										915	11,1-11,4

Torque-control travel

on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
600	114,5 - 116,5 (112,5 - 118,5)	-		1050	105,0 - 108,0 (103,0 - 110,0)	100	195,0 - 235,0 19,5-21,0 mm RW
						225	8,0-14,0 (5,5-16,5)

Checking values in brackets

Test Specifications Fuel Injection Pumps ② and Governors

PE 6 P 100 A 320 RS 384
Komb.-Nr. 0 401 846 438

RQ 225/1100 PA 517

supersedes 1.82

company: DAF

engine: DKL

151 kW (205 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke ^{3,2-3,3}
(3,15-3,35) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5+0,1	11,1-11,3	0,35(0,6)			
225	7,2-7,4	1,0-1,4	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Setting point		Test specifications				Test specifications				Control rod travel	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,8 4,0 1300	1140-1155 1170-1200 0-1,0	225	7,3	100 min. 7,5 225 7,2-7,4 325-365=2,0		600 1050 800 855	11,5-11,6 10,8-11,0 11,2-11,4 10,9-11,2

Torque-control travel
on flyweight assembly dimension a = 0,25 mm

Speed regulation: At

1140-1155 min⁻¹

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
600	110,5-112,5 (108,5-114,5)	600		1050	107,0-111,0 (105,0-113,0)	100	195,0-235,0 =19,5-21,0

Checking values in brackets

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Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 m 7

1. Edition

En

PE 6 P 100 A 320 RS 384/Y

RQ 300/1100 PA 450/2 DR

Komb.-Nr. 0 401 846 412/Y

supersedes

company DAF

engine: DKL 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

^{3,20-3,30}
(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,9+0,1	11,4-11,7	0,3(0,60)			
225	7,3-7,5	0,8-1,2	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	10,1	1145-1160	225	7,4	100	min.7,5	600	11,9-12,0
				4,0	1175-1205			225	7,3-7,5	825	11,7-11,9
				1300	max. 1,0			325-365	=2,0	915	11,1-11,4
										1050	11,1-11,2

Torque-control travel

0,45

on flyweight assembly dimension a =

mm

Speed regulation: At

1145-1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
600	114,0-117,0 (112,5-118,5)	600		1050	104,0-109,0 (102,5-110,5)	100	195,0-235,0 RW = 19,5- 21,0 mm

Checking values in brackets

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Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 m 10

1. Edition

En

PE 6 P 100 A 320 RS 384/Z

RQ 250/1100 PA 517

Komb.-Nr. 0 401 846 438/Z

supersedes

company DAF

engine: DKL 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,20-3,30
(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5+0,1	11,0-11,3	0,3(0,60)			
225	7,2-7,4	1,0-1,4	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Control rod travel mm		Setting point	Test specifications		Setting point	Test specifications		Control rod travel		Control rod travel	
rev/min 1	2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,8	1140-1155	225	7,3	100	min.7,5	600	11,5-11,6
				4,0	1170-1200			225	7,2-7,4	800	11,2-11,4
				1300	max. 1,0			325-365	=2,0	855	10,9-11,2
										1050	10,8-11,0

Torque-control travel
on flyweight assembly dimension a = 0,25 mmSpeed regulation: At 1140-1155 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	rev/min 5	cm ³ /1000 strokes 6	rev/min 7	Control rod travel mm 8
600	110,0-113,0 (108,5-114,5)	600	1050	106,5-111,5 (105,0-113,0)	100	195,0-235,0	
						RW = 19,5- 21,0 mm	

Checking values in brackets

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Testoil-ISO 4113

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Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 t 3

En 2. Edition

PE 6 P 100 A 320 RS 384/Y
Komb.-Nr. 0 401 846 452/Y

RQ 225/1000 PA 571

supersedes...

company: DAF

engine: DKDL 1160 V

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,20-3,30

(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
625	11,5+0,1	11,0-11,3	0,3(0,60)			
1000	10,6+0,2	10,0-10,4	-			
225	7,5-7,7	1,5-1,7	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Control rod travel mm 2		Setting point		Test specifications		Setting point		Test specifications		Control rod travel	
rev/min 1	mm	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,6 4,0 1250	1045-1060 1100-1130 max. 1,0	225	7,6	100 225 330-370	min. 8,0 7,5-7,7 =2,0	625 850 1000	11,5-11,6 11,0-11,2 10,6-10,8

Torque-control travel
on flyweight assembly dimension a =

0,50

mm

Speed regulation: At 1045-1060 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
625	110,0-113,0 (108,5-114,5)	625		1000	100,0-104,0 (98,0-106,0)	100	170,0-210,0 RW = 19,5- 21,0 mm

Checking values in brackets

5.85

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Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 m 12

1. Edition

En

PE 6 P 100 A 320 RS 384/Z
Komb.-Nr. 0 401 846 452/Z

RQ 250/1000 PA 571

supersedes

company: DAF

engine: DKDL 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,20-3,30$
(3,15-3,35) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,4+0,1	9,8-10,0	0,3(0,60)			
1000	10,6+0,2	9,3-9,7	-			
250	7,5-7,7	0,9-1,3	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Control rod travel mm 2		Setting point		Test specifications		Setting point		Test specifications		Control rod	
rev/min 1	mm	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,6 4,0 1250	1045-1060 1100-1130 max. 1,0	250	7,6	100 250 345-385=2,0	min.8,4 7,5-7,7	600 820 900 1000	11,4-11,5 11,2-11,4 10,8-11,1 10,6-10,8

Torque-control travel
on flyweight assembly dimension a = 0,50 mmSpeed regulation: At 1045-1060 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery idle speed	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	3a	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes/mm 7
500	98,0-100,0 (96,0-102,0)	600		1000	93,0-97,0 (91,0-99,0)	100	170,0-210,0 RW = 19,5- 21,0 mm

Checking values in brackets

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 11,6 m 13

1. Edition

En

PE 6 P 100 A 320 RS 384-1

RQ 225/1100 PA 574-1

Komb.-Nr. 0 401 846 513

supersedes

company: DAF

engine: DK 1160 V

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke ^{3.2-3.3}
 (3.15-3.35) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,1+0,1	10,8-11,0	0,35 (0,6)			
225	7,2-7,4	1,0-1,4	0,35 (0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3				Idle speed regulation Setting point rev/min 7				Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		Test specifications rev/min 6		Control rod travel mm 8		Test specifications rev/min 9		Control rod travel mm 12	
550		500		16,0 9,1 4,0 1300		225		100 min. 7,5 225 7,2-7,4 325-365 = 2,0		600 11,1-11,2 1050 10,1-10,3 820 10,8-11,0 925 10,3-10,6	

 Torque-control travel on flyweight assembly dimension a = 0,5 mm Speed regulation: At 1140-1155 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7	
600		-		1050		100	
108,0-110,0 (106,0-112,0)				97,0-101,0 (94,5-103,5)		195,0-235,0 (191,0-239,0) = 19,5-21,0 mm RW 10,0-14,0 (7,5-16,5)	
						225	

Checking values in brackets

5.85

Test Specifications Fuel Injection Pumps (1A) and Governors

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WPP 001/4 DAF 11,6 w

2. Edition

En

PE 6 P 100 A 320 RS 384-1 RSV 250-1100 P 5/506

Komb.-Nr. 0 401 876 284

Note VDT-I-420/114

supersedes 7.84
DAF
company DK 1160 V
engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,2-3,3 mm (from BDC)
(3,15-3,35)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5±0,1	11,1-11,3	0,35(0,6)			
250	7,2-7,4	1,2-1,6	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 21	250	6,8	1050	10,8-11,0
	x = 4,3						250	7,2-7,4	600	11,5-11,6
ca. 50	9,8	1125-1135					700-760	2,0	825	11,2-11,4
2a	4,0	1260-1290							900	11,1-11,4
	1400	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
600	110,5-112,5 (108,5-114,5)	1125-1135*	1050	106,5-111,5 (104,0-114,0)	100	195,0-235,0 (191,0-239,0) = 19,5-21,0 mm RW	250	7,3	

Checking values in brackets

* 1 mm less control rod travel than col 2

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Testoil-ISO 4113

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Test Specifications Fuel Injection Pumps and Governors

40

2PP 001/4 DAF 11,6 m 1

1. Edition
EnPE 6 P 100 A 320 RS 384-1/Y
Komb.-Nr. 0 401 846 465/Y

RQ 225/1000 PA 571

supersedes

company DAF

engine: DKDL 1160 V

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 3,20-3,30 \\ (3,15-3,35) \end{matrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
625	11,5+0,1	11,0-11,3	0,3(0,6)			
1000	10,6+0,2	10,0-10,4	-			
225	7,5-7,7	1,5-1,7	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 4		rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9		rev/min 10		Torque control rev/min 11		Control rod travel mm 12	
550	15,6-16,4	550	16,0	9,6	1045-1060	225	7,6	100	min.8,0	625	11,5-11,6			625	11,5-11,6		
				4,0	1100-1130			225	7,5-7,7	850	11,0-11,2			850	11,0-11,2		
				1250	max. 1,0			330-370	=2,0	1000	10,6-10,8			1000	10,6-10,8		

Torque-control travel on flyweight assembly dimension a = 0,50 mm Speed regulation: At 1045-1060 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6		Control rod travel mm 7	
625	110,0-113,0 (108,5-114,5)	625		1000	100,0-104,0 (98,0-106,0)	100		170,0-210,0 RW = 19,5- 21,0 mm	

Checking values in brackets

5.85

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Testoil-ISO 4113

H1

H1

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 m 2

1. Edition

En

PE 6 P 100 ^ 320 RS 384-1/Y
Komb.-Nr. G 401 846 466/Y

RQ 300/1100 PA 574

supersedes-

company: DAF

engine: DKL 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 41+3

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,20-3,30
(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5+0,1	11,0-11,3	0,3(0,60)			
1050	10,8+0,2	10,7-11,2	-			
225	7,2-7,4	1,0-1,4	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control					
①		Setting point		Test specifications		④		Setting point		Test specifications		⑤		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12				
550	15,6-16,4	550	15,0	9,8 4,0 1300	1140-1155 1170-1200 max. 1,0	225	7,3	100 225 325-365=2,0	min.7,5 7,2-7,4 365=2,0	600 800 855 1050	11,5-11,6 11,2-11,4 10,9-11,2 10,8-11,0				

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 m 3

1. Edition

En

PE 6 P 100 A 320 RS 384-1/Z
Komb.-Nr. 0 401 846 465/Z

RQ 250/1000 PA 571

supersedes -

company: DAF

engine: DKDL 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 3,20-3,30 \\ (3,15-3,35) \end{matrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,4+0,1	9,8-10,0	0,3 (0,60)			
1000	10,6+0,2	9,3-9,7	-			
250	7,5-7,7	0,9-1,3	0,3 (0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation Setting point ④				Idle speed regulation Setting point ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,6 4,0 1250	1045-1060 1100-1130 max. 1,0	250	7,6	100 250 345-385=2,0	min.8,4 7,5-7,7 2,0	600 820 900 1000	11,4-11,5 11,2-11,4 10,8-11,1 10,6-10,8

Torque-control travel
on flyweight assembly dimension a = 0,5 mm

Speed regulation: $\dot{A}t$ 1045-1060 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a		Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3		rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
600	98,0-100,0 (96,0-102,0)	500		1000	93,0-97,0 (91,0-99,0)	100	170,0-210,0 RW = 19,5- 21,0 mm

Checking values in brackets

5.85

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Testoil-ISO 4113

H3

H3

Test Specifications Fuel Injection Pumps ② and Governors

PE 6 P 100 A 320 RS 384-1/Z

RQ 250/1100 PA 574

Komb.-Nr. 0 401 846 466/Z

supersedes

company DAF

engine: DKL 1160

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,20-3,30
(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5+0,1	11,0-11,3	0,3(0,60)			
225	7,2-7,4	1,0-1,4	0,3(0,55)			

Adjust the fuel delivery from each outlet according to the values in

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm.

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	9,8	1140-1155	225	7,3	100	min. 7,5	600	11,5-11,6
				4,0	1170-1200			225	7,2-7,4	800	11,2-11,4
				1300	max. 1,0			325-365	=2,0	855	10,9-11,2
										1050	10,8-11,0

Torque-control travel
on flyweight assembly dimension a =

0,25

mm

Speed regulation: At

1140-1155 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
600	110,0-113,0 (108,5-114,5)	600		1050	106,5-111,5 (105,0-113,0)	100	195,0-235,0 RW = 19,5- 21,0 mm

Checking values in brackets

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 1

5. Edition

En

PE 6 P 110 A 320 RS 385 RSV 250-750 P7/479
Komb.-Nr. 0 401 876 250
1- 5- 3 - 6 - 2 - 4
0-60-120-180-240-300° ± 0,5° (± 0,75°)

supersedes 7.84
company DAF
engine DK, DKT, DKS, DKA116C

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95) mm (from BDC) RW 9,0-12,0 mm
2,80-2,90

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,6+0,1	16,9-17,2	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,45 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
Loose	800	0,3-1,0	-	-	-	ca. 18	250	6,9	-	-
	x = 3,75						250	6,8-7,0		
							245-305	= 2,0 mm **		
ca. 44 (2a)	790-795 = 11,6 810-825 = 4,0 950 = 0,3-1,7									

The numbers denote the sequence of the tests

** Set idle auxiliary-spring at 2 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to ...)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
750	169,5-172,5 (167,0-175,0)	790-795*	-	-	250	25,0-33,0 (22,5-35,5)	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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H5

H5

Test Specifications Fuel Injection Pumps ①A and Governors

40

WPP 001/4 DAF 11,6 t 7

1. Edition

En

PE 6 P 110 A 320 RS 385/R
Komb.-Nr. 0 401 876 250/R

RSV 250-900 P 7/479

supersedes
company DAF
engine DK 1160 A
DK 1160 M

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC)

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,0+0,1	13,9-14,2	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			④ Lower rated speed Control-lever deflection in degrees rev/min			③ Torque control Control rod travel rev/min	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 19	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 44	10,1	760-770					260-320	= 2,0		
②a	4,0	770-790								
	950	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop Test oil temp. 40°C (104°F) rev/min		⑥ Rotational-speed limit Note: changed to ... rev/min		③a Fuel delivery characteristics rev/min		Starting fuel delivery Idle		④a Idle stop Control rod travel mm	
1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	
750	138,5-141,5 (136,0-144,0)	760-770*	-	-	100	min. 19,5 mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 8

1. Edition

En

PE 6 P 110 A 320 A RS 385/S
Komb.-Nr. 0 401 876 250/S

RSV 250-750 P 7/479

supersedes...

company DAF

engine DK 1160 A

DK 1160 M

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Port closing at prestroke 2,80-2,90
(2,75-2,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,1+0,1	13,9-14,2	0,4(0,75)			
250	6,8-7,0	2,5-3,3	0,4(0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 19	250	6,9	-	-
	X =						250 260-320	6,8-7,0 = 2,0		
ca. 44	10,1	760-770								
2a	4,0	770-790								
	950	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
750	138,5-141,5 (136,0-144,0)	760-770*	-	-	100	min.19,5 mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H7

H7

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 9

En

1. Edition

PE 6 P 110 A 320 RS 385/T
Komb.-Nr. 0 401 876 250/T

RSV 250-900 P 7/479

supersedes

company DAF

engine DKA 1160 A

DKA 1160 M

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,8-2,9
(2,75-2,95) mm (from BDC)

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,1+0,1	14,1-14,4	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 19	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 52	10,1	910-920					260-320	= 2,0		
2a	4,0	920-940								
	1100	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery		5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle				Control rod	
rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9			
750	140,5-143,5 (138,0-146,0)	910-920*	-	-	100	min.19,5 mm RW	-	-			

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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H8

H8

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 10

En

1. Edition

PE 6 P 110 A 320 RS 385/U
Komb.-Nr. 0 401 876 250/U

RSV 250-750 P 7/479

supersedes

company DAF

engine DKA 1160 A

DKA 1160 M

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,80-2,90 mm (from BDC)
(2,75-2,95)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,1+0,1	14,1-14,4	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 19	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 44	10,1	760-770					260-320	= 2,0		
2a	4,0	770-790								
	950	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop		(6) Rotational-speed limit		(3a) Fuel delivery characteristics		Starting fuel delivery		(5)		(4a) Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle					
rev/min	cm³/1000 strokes	rev/min	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9			
750	140,5-143,5 (138,0-146,0)	760-770*	-	-	100	min.19,5 mm RW	-	-			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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5.85

H9

H9

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 11

1. Edition

En

PE 6 P 110 A 320 RS 385/V
Komb.-Nr. 0 401 876 250/V

RSV 250-900-P 7/479

supersedes
DAF
compares
DKS 1160 A
engine
DKS 1160 M

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90

Port closing at prestroke

(2,75-2,95)

mm (from BDC bei RW = 9,0-12,0 mm)

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,0-13,2	17,9-18,3	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1)

1 Upper rated speed rev/min			intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	X =						250	6,8-7,0		
							260-320	= 2,0		
ca. 42	12,0	910-920								
2a	4,0	920-940								
	1100	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
750	178,5-182,5 (176,5-184,5)	910-920*	-	-	100	min. 19,5 mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 12

1. Edition

En

PE 6 P 110 A 320 RS 385/W

RSV 250-750 P 7/479

Komb.-Nr. 0 401 876 250/W

supersedes

company DAF

engine DKS 1160 A

DKS 1160 M

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,80-2,90
(2,75-2,95)

mm (from BDC) bei RW = 9,0-12,0 mm

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,0+0,2	17,9-18,3	0,4 (0,75)			
250	6,8-7,7	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 42	12,0	760-770					260-320	= 2,0		
2a	4,0**	770-810								
	950	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5		rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
750	178,5-182,5 (176,5-184,5)	760-770*	-	-		100	min. 19,5 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H11

H11

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 13

1. Edition

En

PE 6 P 110 A 320 RS 385/Z RSV 250-900 P 7/479
Komb.-Nr. 0 401 876 250/Z

supersedes
company DAF
engine DKT 1160 A
DKT 1160 M

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC bei RW = 9,0-12,0 mm)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,6+0,1	16,9-17,3	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 49	11,6	910-920					260-320	= 2,0		
2a	4,0**	920-940								
	1100	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
750	169,0-173,0 (167,0-175,0)	910-920*	-	-	100	min. 19,5 mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H12

H12

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 4

3. Edition

En

PE 6 P 110 A 320 RS 385-1
Komb.-Nr. 0 401 876 256

RSV 250-750 P 7/479

supersedes 7.84

company DAF

engine DK, DKT, DKS, DKA

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,8-2,9
(2,75-2,95) mm (from BDG) RW 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,8+0,1	17,4-17,7	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,45 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control Control rod travel mm 11	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	
loose	800	0,3-1,0	-	-	-	ca. 18	250	6,9	-	-
	x = 3,75						250	6,8-7,0		
ca. 44	11,8	790-795					245-305	= 2,0		
2a	4,0	810-825						**		
	950	0,3-1,7								

The numbers denote the sequence of the tests

** Set idle auxiliary-spring at 2 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to ... rev/min 3	3a Fuel delivery characteristics rev/min 4		Starting fuel delivery 5 Idle rev/min 6		4a Idle stop Control rod travel mm 9	
cm ³ /1000 strokes 2			cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		rev/min 8	
750	174,0-177,0 (171,5-179,5)	790-795*	-	-	250	25,0-33,0 (22,5-35,5)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H13

H43

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 19

1. Edition

En

PE 6 P 110 A 320 RS 385-1/T

RSV 250-900 P 7/479

Komb.-Nr. 0 401 876 256/T

supersedes

company DAF

engine DKA 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,1+0,2	14,1-14,4	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
							250	6,8-7,0		
ca. 52	10,1	915-920					260-320	= 2,0		
2a	4,0**	935-950								
	1100	0,3-1,7								

The numbers denote the sequence of the tests ** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 10,1 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	Control rod travel mm 9
750	140,5-143,5 (138,0-146,0)	915-920*	-	-	100	RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Testoil-ISO 4113

H14

44

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 20

1. Edition

En

PE 6 P 110 A 320 RS 385-1/U

RSV 250-750 P 7/479

Komb.-Nr. 0 401 876 256/ U

superseded
DAF
company
DKA 1160
engine

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,80-2,90 \\ (2,75-2,95) \end{matrix}$ mm (from BDC bei RW = 9,0-12,0 mm)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
750	11,1+0,2	14,1-14,4	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	x =						250	6,8-7,0		
ca. 44	10,1	790-795					260-320	= 2,0		
2a	4,0**	810-825								
	950	0,3-1,7								

The numbers denote the sequence of the tests

** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 10,1 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min				Idle		Control rod travel mm	
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
750	140,5-143,5 (138,0-146,0)	790-795*	-	-	-	100	RW = 19,5 - 21,0 mm		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H15

415

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 21

1. Edition

En

PE 6 P 110 A 320 RS 385-1/V

RSV 250-900 P 7/479

Komb.-Nr. 0 401 876 256/V

supersedes

company DAF

engine DKS 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC) bei RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,0+0,2	17,9-18,3	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	x =						250	6,8-7,0		
ca. 49	12,0	915-920					260-320	= 2,0		
2a	4,0**	935-950								
	1100	0,3-1,7								

The numbers denote the sequence of the tests

** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 12,0 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note changed to ...)				Idle			
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
750	178,5-182,5 (176,5-184,5)	915-920*	-	-	100	RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H16

H16

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WP# 001/4 DAF 11,6 t 22

1. Edition

En

PE 6 P 110 A 320 RS 385-1/W

RSV 250-750 P 7/479

Komb.-Nr. 0 401 876 256/W

supersedes

company DAF

engine DKS 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90

Port closing at prestroke

(2,75-2,95)

mm (from BDC) bei RW = 9,0-12,0 mm

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,0+0,2	17,9-18,3	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
Loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 42	12,0	790-795					260-320	= 2,0		
2a	4,0**	810-825								
	950	0,3-1,7								

The numbers denote the sequence of the tests

** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 12,0 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	
750	178,5-182,5 (176,5-184,5)	790-795*	-	-	100	RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H17

H47

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 23

1. Edition

En

PE 6 P 110 A 320 RS 385-1/X

RSV 250-900 P 7/479

Komb.-Nr. 0 401 876 256/X

supersedes
DAF
company
DKTD 1160
engine

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,80-2,90) (2,75-2,95) mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,2+0,2	14,4-14,7	0,4 (0,75)			
250	6,8-7,7	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Control lever deflection in degrees rev/min 8 9			3 Torque control rev/min 10 11	
	Control rod travel mm 2	Control rod travel mm rev/min 3								
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 49	10,2	915-920					260-320	= 2,0		
2a	4,0**	935-950								
	1100	0,3-1,7								

The numbers denote the sequence of the tests

** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 10,2 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop rev/min 8	
	cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		Control rod travel mm 9
750	143,5-146,5 (141,0-149,5)	915-920*	-	-	-	100	RW = 19,5 - 21,0 mm		

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 24

1. Edition

En

PE 6 P 110 A 320 RS 385-1/Y

RSV 250-750 P 7/479

Komb.-Nr. 0 401 876 256/Y

supersedes

company DAF

engine DKDT 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,2+0,2	14,4-14,7	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	700	0,3-1,0	-	-	-	ca. 17	250	6,9	-	-
	X =						250	6,8-7,0		
ca. 42	10,2	790-795					260-320	= 2,0		
②a	4,0**	810-825								
	955	0,3-1,7								

The numbers denote the sequence of the tests

** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 10,2 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
750	143,5-146,5 (141,0-149,0)	790-795*		-	-	100	RW = 19,5 - 21,0 mm		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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05.85

H19

H49

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 25

1. Edition

En

PE 6 P 110 A 320 RS 385-1/Z

RSV 250-900 P 7/479

Komb.-Nr. 0 401 876 256/Z

supersedes
company DAF
engine DKT 1160

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,80-2,90$
(2,75-2,95) mm (from BDC) bei RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,6+0,1	16,9-17,3	0,4 (0,75)			
250	6,8-7,0	2,5-3,3	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Control-lever deflection in degrees 7			Lower rated speed rev/min 8			3 Torque control rev/min 10		
Control rod travel mm 2	Control rod travel mm rev/min 3					Control-lever deflection in degrees 7			Control rod travel mm 9			Control rod travel mm 11		
loose	700	0,3-1,0	-	-	-	ca. 17			250	6,9		-		-
	X =								250	6,8-7,0				
ca. 49	11,6	915-920							260-320	= 2,0				
2a	4,0**	935-950												
	1100	0,3-1,7												

The numbers denote the sequence of the tests

** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 11,6 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop rev/min 8		4a Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7					
750	169,0-173,0 (167,0-175,0)	915-920*	-	-	-	100	RW = 19,5 - 21,0 mm				

Checking values in brackets

* 1 mm less control rod travel than col. 2

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H20

H20

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 5

3. Edition

En

PE 6 P 120 A 320 RS 385-2 RSV 250-750 P 7/479
Komb.-Nr. 0 401 876 274
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes 7.84
company DAF
engine DKX 1160

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from 80°) RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,6+0,1	22,1-22,3	0,5(0,9)			
250	4,9-5,1	1,4-2,0	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control Control rod travel mm	
Control rod travel mm 2	Control rod travel mm rev/min 3		4	5	6	rev/min 8	Control rod travel mm 9		rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 18	250	5,0	-	-
	x = 3,75						250	4,9-5,1		
							250-290	= 2,0		
ca. 44	10,6	790-795						**		
2a	4,0	810-825								
	950	0,3-1,7								

The numbers denote the sequence of the tests

**Set idle auxiliary-spring at 2 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F)		6 Rotational-speed limit Note: changed to ... rev/min		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
750	221,0-223,0 (218,0-226,0)	790-795*	-	-	-	250	14,0-20,0 (11,0-23,0)	250	5,0

Checking values in brackets

2 mm control rod travel than col. 2

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H21

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 t 26

1. Edition

En

PE 6 P 120 A 320 RS 385-2/Y

RSV 250-900 P 7/479

Komb.-Nr. 0 401 876 274/Y

supersedes
DAF
company
DKX 1160
engine

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,80-2,90}{(2,75-2,95)}$ mm (from BDC bei RW = 9,0-12,0 mm.

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,0+0,1	21,6-22,0	0,5 (0,90)			
250	4,9-5,1	0,2-0,9	0,65 (0,95)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 18	250	5,0	-	-
	X =						250	4,9-5,1		
ca. 52	11,0	915-920					250-300	= 2,0		
2a	4,0**	935-950								
	1100	0,3-1,7								

The numbers denote the sequence of the tests ** max. speed difference = 20 - 30 min⁻¹, between control-rod travel 11,0 and 4,0 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min 1	cm ³ /1000 strokes 2	3		4	5	6	7	8	9
750	216,0-220,0 (213,0-223,0)	915-920	-	-	-	100	RW = 19,5 - 21,0 mm		

Checking values in brackets

* 1 mm less control rod travel than col 2

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Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 9,8 a 6

1. Edition

En

PES 6 P 120 A 320 RS 419
Komb.-Nr. 0 402 046 313

RQV 275-1050 PA 495-8

supersedes

company RVI

engine MIDS 062045
169 kW

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC)

Port closing mark 9.0° after
port closing cylinder 1.

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	10,3+0,1	19,0-19,2	0,5(0,9)			
275	4,8-5,0	1,7-2,3	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed				Intermediate rated speed				Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Control rod travel rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm	
1	2	3		4	5	6	7	8	9	10	11	
max.	1130	15,2-17,8		-	-	-	ca. 8	200	min.5,4	250	1,0-1,2	
ca. 64	9.3	1110-1120						275	4,0-4,2	450	3,3-3,8	
	4,0	1185-1215					275-390			800	5,7-6,0	
	1350	0 - 1,0								1050	7,7	

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (4a)	Fuel delivery characteristics high idle speed (5b)		Starting fuel delivery Idle switching point (6)		Torque-control travel Control rod travel mm (5)	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1050	0,7 bar 190,0-192,0 (187,0-195,0)	1110-1120 *	LDA 650	0,7 bar 169,0-175,0 (166,0-178,0)	100	140,0-160,0 (136,0-164,0)	-	-
			LDA 500	0 bar 104,0-106,0 (101,0-109,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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H23

H23

D. Adjustment Test for Manifold Pressure Compensator

RVI 9,8 a 6

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES6P.. RS 419 + RQV..PA 495-8	0,70	0 0,36 0,16	10,3-10,4 8,1-8,2 9,7-9,8 8,5-8,8

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 8,8 d 4

1. Edition

En

PES 6 P 120 A 320 RS 419-2 RQV 275-950 PA 735
Komb.-Nr. 0 402 046 311

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company RVI

engine MIDS 062045
144 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Port closing mark 9.5° after
port closing cylinder 1.

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
500	8,5-8,6	11,6 - 11,8	0,5 (0,9)			
275	3,3-3,5	0,7 - 1,3	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3 ①a ②a	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6 ④	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9 ③	rev/min 10	mm 11 ①
max.	1140	15,2-17,8	-	-	-	ca. 12	200	min. 4,9	250	1,0-1,2
ca. 62	7,0	1010-1020					275	3,3-3,5	450	3,3-3,8
	4,0	1065-1095							800	5,7-6,0
	1200	0 - 1,0				280-400 ③a			950	6,9

Torque control travel a = 0,60 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5b)		Starting fuel delivery idle switching point (6)		Torque-control (5) travel Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 500	0,7 bar 116,0-118,0 (113,0-121,0)	1010-1020 *	LDA 950	0,7 bar 135,0-141,0 (132,0-144,0)	100	140,0-160,0 (136,0-164,0)	500	8,5+0,1
			LDA 500	0 bar 101,0-103,0 (98,0-106,0)	275	7,0- 13,0 (4,0- 16,0)	950	7,9+0,1
							750	8,2+0,2
							800	8,0+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2
1,5 4.85

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Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

RVI 8,8 d 4

- 2 -

Test at n = 500

rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 P...RS 419-2 + RQV...PA 735	0,70		8,5 - 8,6
		0	7,7 - 7,8
		0,25	8,3 - 8,4
		0,23	7,9 - 8,1

Notes.

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 11,6 u 4

1. Edition

En

Testoil-ISO 4113

PE 6 P 110 A 720 RS 441/Z
Komb.-Nr. 0 401 876 252/Z

RSV 250-1200P5/493

superseded
DAF
company
DHS 825 ml.
engine

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,80-2,95) (2,75-2,95) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	11,9+0,1	12,8-13,1	0,4 (0,75)			
250	5,0-5,2	0,8-1,2	0,4 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.22	250	4,6	400	12,1-12,2
	X =						250	5,0-5,2	300	12,3-12,8
ca.54	10,9	1220-1230					560-625	= 2,0		
2a	4,0	1330-1360								
	1500	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
LDA 1000	0,7 bar 128,0-131,0 (125,5-133,5)	1220-1230*		LDA 600	0 bar 86,0-89,0 (82,5-92,5)	100	245,0-285,0 RW = 19,5 -21,0 mm	0 250	5,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

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J3

J3

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 u 4

- 2 -

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P..RS 441/Z + RSV..P 5/493	0,70	0,36 0,28 0	11,9-12,0 11,4-11,5 10,6-11,0 10,1-10,2

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 DAF 11,6 u 3

1. Edition

En

PE 6 P 110 A 720 RS 441-1/2

RSV 250-900 P 7/479-1

Komb.-Nr. 0 401 876 270/Z

supersedes DAF
company DHS 825

engine
Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,6+0,1	14,3-14,6	0,4 (0,75)			
250	4,8-5,0	0,9-1,3	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Control lever deflection in degrees 7			3 Torque control rev/min 10 Control rod travel mm 11		
Control rod travel mm 2	Control rod travel mm rev/min 3					rev/min 8	Control rod travel mm 9				
loose	800	0,3-1,0	-	-	-	ca.18	250	4,9	-	-	
	X =						250	4,8-5,0			
ca.56	10,6	915-920					250-290	= 2,0			
2a	4,0**	935-950									
	1100	0,3-1,7									

** max. speed difference = 20 - 30 min⁻¹, between
The numbers denote the sequence of the tests control-rod travel = 10,6 und RW = 4,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F) rev/min 1		6 Rotational-speed limit Note changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 4a Idle stop rev/min 8 Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7			
750	142,5-145,5 (140,0-148,0)	915-925*	-	-	-	100	RW = 19,5 - 21,0 mm		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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J5

J5

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 8,3 o 10

1. Edition

En

PE 6 P 100 A 720 RS 447-1/Z

RSV 250-900 P 7/479-1

Komb.-Nr. 0 401 876 269/Z

supersedes
DAF
company
engine DHT 825

Port closing difference
= 0,9 - 1,0 mm between
control-rod travel 9 mm
and control-rod travel 21 mm

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,20-3,30$
 $(3,15-3,35)$ mm (from BDC bei RW = 9,0-12,0 mm.

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
750	12,7+0,1	14,2-14,5	0,35(0,60)			
250	5,3-5,5	0,9-1,3	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	700	0,3-1,0	-	-	-	ca. 17	250	5,4	-	-
	X =						250	5,3-5,5	.	
ca. 48	11,7	915-920					250-295	= 2,0		
2a	4,0	935-950								
	1100	0,3-1,7								

The numbers denote the sequence of the tests max. speed difference = 20 - 30 min⁻¹, between control-rod travel = 11,7 und RW = 4,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to ... rev/min				Idle			
rev/min	cm ³ /1000 strokes	3	4	5	6	7	8	9	Control rod travel mm
1	2	3	4	5	6	7	8	9	
750	142,0-145,0 (140,5-146,5)	915-920*	-	-	100	RW = 19,5 - 21,0 mm			

Checking values in brackets

* 1 mm less control rod travel than col 2

05.85

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,9 a 1

3. Edition

En

PES 6 P 120 A 720 LS 470 RQV 250-1100 PA 700
Komb.-Nr. 0 402 046 295
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 0 67

superseded 7s. 84

company MAN

engine: D 28 66 KF

265 kW/2200 min⁻¹

MAN-Nr. 2-7497

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,8-2,9}
(2,75-2,95) mm (from BDC) Zyl. 6; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,5+0,1	23,8-24,0	0,5 (0,9)			
250	5,2-5,4	1,2-1,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1130	15,2-17,8	-	-	-	ca. 10	100	min. 6,8	300	1,7-2,0
ca. 62	10,3	1140-1150					250	5,2-5,4	850	6,0-6,2
	4,0	1225-1255					360-420 = 2,0		1100	8,3
	1350	0 - 1,0								

Torque control travel a = 1,15 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 750	1,0 bar 238,0-240,0 (235,0-243,0)	1140-1150*	LDA 650	1,0 bar 239,0-245,0 (236,0-248,0)	100	225,0-245,0 (221,0-249,0)	750	12,5+0,1
LDA 1100	1,0 bar 213,0-219,0 (210,0-222,0)		LDA 500	0,4 bar 191,0-197,0 (188,0-200,0)			900	11,3+0,1
			LDA 500	0 bar 139,0-141,0 (136,0-144,0)			1000	12,1+0,2
								11,5+0,3

Checking values in brackets

(136,0-144,0)

* 1 mm less control rod travel than col. 2
5.85

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D. Adjustment Test for Manifold Pressure Compensator

MAN 11,9 a 1 -2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PE6P..LS 470 +RQV..PA 700	1,0	0 0,40 0,24	12,5-12,6 9,3-9,4 11,1-11,2 10,2-10,6

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DEE 10,1 b

1. Edition

En

US-PES 6P 110 A 720 RS 3086 US-RSV 400-1050 PO/492-1

Komb.-Nr. 9 400 231 174

Values apply to fuel-injection test tubing 9 681 271 004

supersedes -

company John Deere

engine 6619 A

215 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,45-3,55
(3,40-3,60) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	13,9+0,1	21,4-21,6	0,4 (0,75)			
400	6,0-6,2	1,9-2,5	0,45 (0,75)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 21	400	5,6	1050	13,9-14,0
	X =						400	6,0-6,2	700	14,3-14,6
ca. 42	12,9	1090-1100								
2a	4,0	1185-1215								
	1280	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit	3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)								
rev/min 1	cm ³ /1000 strokes 2	Note changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1050	1,0 bar 213,5-215,5 (210,5-218,5)	1090-1100*	LDA 700	1,0 bar 223,5-226,5 (220,0-230,0)	100	135,0-155	0 400	6,1
			LDA 500	0 bar 136,5-139,5 (133,0-143,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

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4.85

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

DEE 10,1 b

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
US-PES6P..RS 3086 +RST.. P0/492-1	0,36	0,20	13,8-14,0 12,1-12,3

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 SSC 10,5 b

1. Edition

En

PES 6 P 100 A 320 RS 3087-1 RQV 300-1250 PA 629

Komb.-Nr. 0 402 046 743

supersedes

company SSCM

engine 6 L 520 AN
148 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC); RW = 9.0-12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,5+0,1	10,5-10,7	0,35(0,6)			
300	8,5-8,7	1,4-2,0	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1310	15,2-17,8	-	-	-	ca. 17	100 300	min. 10,1 8,5-8,7	300 850 1250	1,8-1,9 4,7-5,0 7,9
ca. 65	11,5 4,0 1550	1290-1300 1385-1415 0 - 1,0				350-460				

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	105,0-107,0 (103,0-109,0)	1290-1300 *	-	-	100 300	165,0-185,0 (161,0-189,0) 14,0-20,0 (11,5-22,5)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2
5.85
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Test Specifications Fuel Injection Pumps ② and Governors

PES 6 P 100 A 320 RS 3087-1 RQ 400/1100 PA 699
Komb.-Nr. 0 402 046 746

supersedes
company: SSCM
engine: 6 L 520 S 1

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC) RW=9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,5+0,1	10,3-10,5	0,35(0,6)			
400	7,4-7,6	1,0-1,4	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
650	19,2-20,8	650	20,0	11,5	1145-1160	400	7,5	400	7,4-7,6	1100	12,5-12,6
	VH=max. 46°			4,0	1225-1255			450	490=2,0	650	12,5-12,7
				1350	0-1,0						

Torque-control travel on flyweight assembly dimension a = mm Speed regulation: At 1145-1160 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes/mm 7
1100	103,0-105,0 (101,0-107,0)	-	-	-	100	170,0-190,0 (166,0-194,0)
					400	10,0-14,0 (7,5-16,5)

Checking values in brackets

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VOL 12,0 1

1. Edition

En

Testoil-ISO 4113

PE 6 P 120 A 320 RS 3088 RSV 200-900 P 4/421

Komb.-Nr. 0 401 876 724

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company Volvo

engine TD 120 G

245 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,4-2,5} (2,35-2,55) mm (from BDC; RW=9,0-12,0 mm)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
700	12,7+0,1	21,1-21,3	0,5(0,9)			2,5 [±] 0,1
250	3,6-3,8	1,6-2,0	0,5(0,7)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel min rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,7	-	-	-	ca. 22	250	3,2	-	-
	X = 5,5						250	3,6-3,8		
ca. 60	11,7	940-950					300-360	= 2,0		
2a	4,0	995-1025								
	1160	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	5	6	7	8	9
700	211,0-213,0 (208,0-216,0)	940-950*	-	-	-	100	390,0-440,0 (386,0-444,0) =20,0-21,0 mm RW	250	3,7
						250	16,0-20,0 (13,0-23,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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5.85

J13

J13

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 VOL 12,0 1 1

1. Edition

En

PE 6 P 120 A 320 RS 3088 RSV 200-1000 P 4/421
Komb.-Nr. 0 401 876 735
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes
company Volvo
engine TD 121 G

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,4-2,5
Port closing at prestroke (2,35-2,55) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,4+0,1	16,9-17,1	0,5(0,9)			2,5 [±] 0,1
250	4,0-4,2	1,6-2,0	0,5(0,7)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,7	-	-	-	ca. 22	250	3,6	-	-
	X = 4,0						250	4,0-4,2		
ca. 58	10,4	1040-1050					280-340	2,0		
2a	4,0	1060-1090								
	1230	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery		5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle				Control rod travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm		
1	2	3	4	5		6	7	8	9		
700	169,0-171,0 (166,0-174,0)	1040-1050*	-	-		100	390,0-440,0 (386,0-444,0)	-	-		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Testoil-ISO 4113

J14

J14

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 PEN 12,0 d 1

1. Edition

En

PE 6 P 120 A 320 RS 3088-2 RSV 650-750 F 4/421

Komb.-Nr. 0 401 876 731

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company Volvo-Penta

engine TD 121 GG

230 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,4-2,5$
(2,35-2,55) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,4±0,1	18,5-18,9	0,5(0,9)			2,5±0,1
650	3,2-3,4	2,0-2,4	0,5(0,7)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 32	650	3,3	-	-
	$X = 2,75$						650	3,2-3,4		
ca. 39	10,4	750-755					630-690=2,0			
2a	4,0	776-789								
	930	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	
700	185,0-189,0 (183,0-191,0)	750-755*	-	-	100	390,0-440,0 =20,0-21,0 mm RW	650	3,3	

Checking values in brackets

* 1 mm less control rod travel than col 2

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5.85

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 SSC 10,5 a 1

1. Edition

En

PES 6 P 120 A 320/RS 3092-1 RQV 400-750 PA 708

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 0 67

supersedes

ccompan:SSCM

engine: 6L 520-S 25

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,8-2,9}
(2,75-2,95) mm (from BDC) RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
700	14,4+0,1	23,0-23,2	0,5 (0,9)			
400	5,2-5,4	1,2-1,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
-	13,4 4,0 1,0	750-755 780-793 900	-	-	-	ca. 10	100 400	min. 8,7 7,1-7,3	-	-
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
700	230,0-232,0 (227,0-235,0)	750-755 *	-	-	100	175,0-195,0 (171,0-199,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BA0 31,8 ± 2

1. Edition

En

PE 12 P 130 A 120 RS 3094 RQV 350-900 PA 618

Komb.-Nr. 0 401 830 703

1-12- 9- 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6

0-45-60-105-120-165-180-225-240-285-300-345 ± 0,5° (+ 0,75°)

DHK:1 688 901 019

Line : 1 680 750 067

supersedes -

company: Baudouin

engine: V 12 P 15 SRCN

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,8-2,9}{(2,75-2,95)}$ mm (from BDC) $RW = 9,0 - 12,0$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	12,2+0,1	30,9 - 31,2	0,6(1,0)			
350	4,8-5,0	2,0 - 2,6	1,0(1,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	940	15,2-17,8	-	-	-	ca. 30	350	4,8-5,0	325	1,2-1,6
ca. 62	11,2 4,0 1150	940-950 1005-1035 0 - 1,0				350-450			500 750 900	3,1-3,8 6,0-6,4 7,9

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery Idle switching point (6)	Torque-control travel (5) Control rod travel mm		
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
900	309,0-312,0 (305,0-315,0)	940-950 *	-	-	350	20,0-26,0 (16,0-30,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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J17

J17

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 GUS 31,8 a 1

1. Edition

En

PE 12 P 130 A 120 RS 3094-2 RQV 350-750 PA 602-2

Komb.-Nr. 0 401 830 709

1-12- 9- 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6

0-45-60-105-120-165-180-225-240-285-300-345 $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

DHK: 1 688 901 019

Line : 1 680 750 706

supersedes -

company: Guascor

engine: E 318

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{3,6-3,7}
(3,55-3,75) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	10,0 \pm 0,1	24,5 - 24,8	0,6(1,0)			
350	3,8-4,0	2,1 - 2,7	1,0(1,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
-	9,0 4,0 1,0	750-755 776-789 900	-	-	-	ca. 8	100 350	min. 5,4 3,8-4,0	-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery idle switching point (6)	Torque-control travel (5)		
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
750	245,0-248,0	750-755 *	-	-	350	21,0-27,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 SSC 14,0 a

3. Edition

En

PE 12 P 100 A 520 RS 3103 RQV 375-1000 PA 639

Komb.-Nr. 0 401 840 708

1- 8- 5-10- 3 - 7 - 6 - 11- 2 - 9 - 4 - 12

0-15-60-75-120-135-180-195-240-155-300-315° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes 9.83

company: SSCM

engine: Poyaud V 12-520 AN

219 kW (298 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,8-2,9 \\ (2,75-2,95) \end{matrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,5+0,1	9,3 - 9,5	0,3(0,6)			
375	7,6-7,8	0,8 - 1,4	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1050	15,2-17,8	-	-	-	ca. 19	100	min. 9,2	350	0,9-1,5
ca. 65	10,5	1040-1050					375	7,6-7,8	800	5,5-5,8
	4,0	1105-1135							1000	7,9
	1250	0 - 1,0				375-475				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b ④a	Fuel delivery characteristics high idle speed ⑤a ⑤b		Starting fuel delivery idle switching point ⑥	Torque-control travel Control rod travel mm ⑤		
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1000	93,0-95,0 (91,0-97,0)	1040-1050 *	-	-	100	230,0-250,0 (226,0-254,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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①

Test Specifications Fuel Injection Pumps and Governors

NPP 001/4 KHD 9,6 q

1. Edition

En

PES 6 P 110 A 720 RS 3104

RQV 300-1150 PA 549-2

Komb.-Nr. 0 402 046 761

supersedes

KHD

company

BF 6L 413 FRC

engine: 220 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95) mm (from BDC) RW 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	14,4±0,5	16,9-17,1	0,4(0,75)			
300	7,6-7,8	1,6-2,2	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1225	15,2-17,8	-	-	-	ca. 20	100	min. 9,1	250	0,5-0,8
ca. 55	13,4	1190-1200					300	7,6-7,8	550	3,6-4,2
	4,0	1295-1325							850	5,4-5,7
	1450	0 - 1,0				320-500			1150	7,8
						③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 1150	0,9 bar 169,0-171,0 (166,0-174,0)	1190-1200 *	LDA 450	0 bar 123,0-125,0 (120,0-128,0)	100	135,0-155,0 (131,0-159,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

J20

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J20

D. Adjustment Test for Manifold Pressure Compensator

KHD 9,6 q

- 2 -

Test at n = 450 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
PES 6 P..RS 3104 + RQV..PA 549-2	0,90	0 0,5 0,36	14,4-14,5 12,4-12,5 13,9-14,0 12,8-13,0

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 UNI 9,6 a
5. Edition

En

PES 6 P 110 A 720 RS 3105

RQV 275-1150 PA 642

supersedes 2.83

company: IVECO-UNIC

8220-22

engine: 176 kW (239 PS)

Testoil-ISO 4113

Komb.-Nr. 0 402 046 749
0 402 046 739
0 402 046 731

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{3,2-3,3}
(3,15-3,35) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,7+0,1	12,2 - 12,4	0,4(0,8)			
275	5,3-5,5	0,9 - 1,5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 11	100	min.6,9	250	0,9-1,1
ca. 60	10,7 4,0 1400	1190-1200 1280-1310 0 - 1,0					275	5,3-5,5	450	2,9-3,3
							280-375		850	5,3-5,5
						③a			1150	8,0

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5b) (5a)		Starting fuel delivery idle switching point (6)		Torque-control travel (5)	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1150	0,7 bar 122,0-124,0 (119,0-127,0)	1190-1200*	LDA 400	0 bar 87,0-89,0 (84,0-92,0)	100	160,0-180,0 (156,0-184,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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D. Adjustment Test for Manifold Pressure Compensator

INI 9,6 a

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES6P..RS 3105 mit RQV..PA 642	0,70	0 0,23 0,21	11,7 - 11,8 10,5 - 10,6 11,3 - 11,4 10,8 - 11,0

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications

Fuel Injection Pumps ②

and Governors

PES 6 P 120 A 320 RS 3119 RQ 750 PA 597
 Komb.-Nr. 0 402 046 745
 Calibrating nozzle-and holder assembly 0 688 901 019
 Test-pressure line 1 680 750 067

supersedes—
 company: RVI
 engine: MIDR 063540

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{3,5-3,6} (3,45-3,65) mm (from BDC)RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	14,8+0,1	33,1-33,3	0,5(0,9)			
250	4,8-5,0	1,5-2,1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
-	-	-	-	13,8 4,0 900	750-755 787-800 0-1,0	-	-	-	-	-	-

Torque-control travel on flyweight assembly dimension a = mm Speed regulation: At 750-755 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever ② Test oil temp. 40°C (104°F)		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
700	331,0-333,0 (328,0-336,0)	-	-	-	-	-

Checking values in brackets

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 10,0 q 3

2. Edition

En

PE 6 P 110 A 320 RS 3108

RQV 325-1100 PA 232-1

Komb.-Nr. 0 401 846 781

supersedes 90.84

compatible with BM

engine EM/TD 100 G

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,0-3,1$
(2,95-3,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,5±0,1	14,7-14,9	0,4(0,8)			2,5±0,1 (2,2-2,9)
325	4,0-4,2	1,7-2,1	0,3(0,6)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1150	15,2-17,8	-	-	-	ca. 13	100	min. 5,5	300	1,5-1,6
ca. 46	10,5	1140-1150					325	4,0-4,2	570	3,5-4,1
	4,0	1210-1240					340-400=2,0		830	5,4-5,6
	1350	0-1,0							1100	8,0

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,9 bar 147,0-149,0 (144,0-152,0)	1140-1150*	LDA 1000	0,9 bar 138,0-142,0 (135,0-145,0)	100	170,0-200,0 =20,0-21,0 mm RW	-	-
			LDA 700	0 bar 100,0-102,0 (97,0-105,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

K1

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05.85

D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 q 3

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PE 6 P..RS 3108 + RQV..PA 232-1	0,90	0 0,61 0,29	11,5-11,6 9,1-9,2 11,3-11,4 9,2-9,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 10,0 q 4

1. Edition

En

PE 6 P 110 A 320 RS 3108
Komb.-Nr. 0 401 846 785

RQV 250-1100 PA 589

supersedes -

company: Volvo

engine: N 10/TD 101 GB

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\overset{3,0-3,1}{(2,95-3,15)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,7+0,1	15,1 - 15,3	0,4 (0,75)			
250	4,1-4,3	1,9 - 2,3	0,3 (0,6)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1180	15,2-17,8	-	-	-	ca. 9	100	min. 5,6	300	1,6-2,1
ca. 61	10,7 4,0 1350	1140-1150 1210-1240 0 - 1,0					250 320-380	4,1-4,3 = 2,0	550 700 1000 1100	4,8-5,6 6,4-6,6 7,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,9 bar 151,0-153,0 (148,0-156,0)	1140-1150*	LDA 1000	0,9 bar 140,0-144,0 (137,0-147,0)	100 250	170,0-200,0 19,0-23,0 (16,5-25,5)	-	-
			LDA 700	0 bar 115,5-118,5 (113,0-121,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

K3

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K3

D. Adjustment Test for Manifold Pressure Compensator

VOL 10,0 q 4

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P..RS 3108 +RQV..PA 589	0,90	0 0,54 0,36	11,7 - 11,8 9,9 - 10,0 11,2 - 11,3 10,0 - 10,2

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 10,0 q 6

1. Edition

En

PE 6 P 110 A 320 RS 3108 V RQV 250-1100 PA 649

Komb.-Nr. 0 401 846 784

supersedes

company Volvo

engine: B 10/THD 101 FD
210 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $3,0-3,1$
(2,95-3,15) mm (from BDCRW=9,0-12,0 mm)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,7+0,1	18,0-18,2	0,4(0,75)			2,5 \pm 0,1
250	5,4-5,6	3,2-3,6	0,3(0,6)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1175	15,2-17,8	-	-	-	ca. 11	100	min.6,7	200	0,7-0,9
ca. 65	12,7 4,0 1350	1140-1150 1220-1250 0-1,0					250 345-405=2,0	5,4-5,6	430 660 1040 1100	3,4-3,9 6,4-6,6 7,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	1,2 bar 180,0-182,0 (177,0-185,0)	1140-1150*	LDA 700	0 bar 108,0-110,0 (105,0-113,0)	100	160,0-190,0 =20,0-21,0 mm RW	-	-
					250	32,0-36,0 (29,5-38,5)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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05.85

K5

K5

D. Adjustment Test for Manifold Pressure Compensator

VOL 10,0 q 6

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P..RS 3108 V + RQV..PA 649	1,2	0 0,72 0,36	13,7-13,8 9,8-9,9 12,8-12,9 10,9-11,0

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 STE 12,0 b

3. Edition

En

PE 8 P 110 A 121 RS 3113 RQ 300-1100 PA 646

Komb.-Nr. 0 401 858 700

1-5-4-8-6-3-7-2 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

supersedes 9.83

company STEYR

engine: WD 815.64
240 kW (326 PS)
Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $2,8-2,9$
 $(2,75-2,95)$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,7+0,1	14,9-15,1	0,4(0,75)			
300	6,1-6,3	1,5-2,1	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
600	15,6-16,4	600	16,0	10,7 4,0 1400	1145-1160 1200-1230 0-1,0	300	6,2	100 300 400-440	min.7,6 6,1-6,3 = 2,0	-	-

 Torque-control travel on flyweight assembly dimension a = 0 mm
 Speed regulation: At $1135-1150 \text{ min}^{-1}$ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
LDA 1100	0,9 bar 149,0-151,0 (146,0-154,0)	-	-	LDA 500	0 bar 96,0-98,0 (94,0-100,0)	100	200,0-240,0 (196,0-244,0)

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator STE 12,0 b

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

P. mp/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PE 8 P..LS 3113 + RQ..PA 646	0,90	0 0,53 0,39	11,7-11,8 9,3-9,4 11,2-11,3 9,8-10,0

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 k 1

2.Edition

En

PE 6 P 120 A 320 RS 3118 RQV 250-1100 PA 657-1
Komb.-Nr.0 401 846 782

supersedes 12-83
company Volvo
TD 121 FD
engine 282 kW

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

Testoil-ISO 4113/

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,6-2,7$
(2,55-2,75) mm (from BDC) RW=9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,3+0,1	23,8-24,1	0,5(0,9)			2,5 \pm 0,1
250	3,3-3,5	1,9-2,3	0,5(0,7)			(2,0-2,9)

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1180	15,2-17,8	-	-	-	ca. 9	100	min.5,0	200	0,7-0,9
ca. 61	12,3	1140-1150					250	3,3-3,5	430	3,4-3,9
	4,0	1220-1250					280-340=2,0		660	6,4-6,6
	1350	0-1,0							1040	
									100	7,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,9 bar 238,0-241,0 (235,0-244,0)	1140-1150*	LDA 700	0 bar 138,0-142,0 (135,0-145,0)	100	240,0-290,0 =20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

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05.85

K9

K9

D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 k 1

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P..RS 3118 + RQV..PA 657-1	0,90	0 0,77 0,17	13,3-13,4 8,5-8,6 13,1-13,2 8,6-8,8

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 K 2

En 2. Edition

PE 6 P 120 A 320 RS 3118
Komb.-Nr. 0 401 846 779

RQV 300-1050 PA 657-2

supersedes 12.83

company: Volvo BM

engine: TD 121 F

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,6-2,7} (2,55-2,75) mm (from BDC) RW 9,0 - 12,0 mm						
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,3+0,1	21,8 - 22,2	0,5(0,9)			2,5 ± 0,1 (2,2 - 2,9)
300	3,7-3,9	2,2 - 2,6	0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1130	15,2-17,8	-	↓	-	ca. 10	100	min. 5,2	250	1,1-1,3
ca. 64	12,3 4,0 1325	1105-1115 1180-1210 0 - 1,0					300 350-410	3,7-3,9 ≈ 2,0	450 660 - 985 050	3,7-4,2 6,4-6,6 7,4

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	1,0 bar 218,0-222,0 (216,0-224,0)	1105-1115 *	LDA 1000	1,0 bar 215,5-220,5 (213,0-223,0)	100	240,0-280,0 = 20,0-21,0 mm RW	-	-
			LDA 700	0 bar 131,0-135,0 (129,0-137,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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KAN

K11

D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 K 2

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P..RS 3118 + RQV..PA 657-2	1,0	0 0,68 0,12	12,3 - 12,4 8,5 - 8,7 12,1 - 12,2 8,9 - 9,1

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 k 4

1. Edition

En

PE 6 P 120 A 320 RS 3118-1 RQV 250-900 PA 657-3
Komb.-Nr. 0 401 846 788

supersedes -

company: Volvo

engine: TD 121 FA

206 kW

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,6-2,7}
(2,55-2,75) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
700	10,7+0,1	18,1 - 18,4	0,5(0,9)			2,5 ± 0,1
250	3,3-3,5	1,8 - 2,3	0,5(0,7)			(2,2 - 2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	980	15,2-17,8	-	-	-	ca. 7	100	min.4,8	250	1,2-1,3
ca.59	9,7 4,0 1100	940-950 980-1010 0 - 1,0					250 280-340	3,3-3,5 =2,0	430 700 940	3,5-3,9 6,4-6,6 7,7-7,9
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 700	0,7 bar 181,0-184,0 (178,0-187,0)	940 - 950 *	LDA 700	0 bar 150,0-154,0 (147,0-157,0)	100	240,0-280,0 = 20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

Testoil-ISO 4113

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K13

D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 k 4

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P..RS 3118-1 +RQV..PA 657-3	0,70	0 0,34 0,17	10,7 - 10,8 9,1 - 9,2 10,5 - 10,6 9,2 - 9,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 k 5

1. Edition

En

PE 6 P 120 A 320 RS 3118-1 RQV 250-1100 PA 657-4
Komb.-Nr. 0 401 846 789

supersedes -

company: Volvo

engine: TD 121 FB

210 kW

Values only apply to test nozzle-and-holder
assembly 1 683 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,6-2,7}
(2,55-2,75) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	10,7+0,1	18,1 - 18,4	0,5(0,9)			2,5 ± 0,1
250	3,3-3,5	1,8 - 2,3	0,5(0,7)			(2,2 - 2,9)

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1180	15,2-17,8	-	-	-	ca. 7	100	min. 4,8	250	1,2-1,3
ca. 63	9,7 4,0 1350	1160-1170 1210-1240 0 - 1,0					250 280-340	3,3-3,5 ≈ 2,0	430 700 160	3,5-3,9 6,4-6,6 8,2-8,4

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed rev/min ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,7 bar 181,0-184,0 (178,0-187,0)	1160-1170 *	LDA 700	0 bar 150,0-154,0 (147,0-157,0)	100	240,0-280,0 = 20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

Testoil-ISO 4113

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D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 k 5

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PE6P..RS 3118-1 +RQV..PA 657-4	0,70	0 0,34 0,17	10,7 - 10,8 9,1 - 9,2 10,5 - 10,6 9,2 - 9,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 K 6

1. Edition

En

PE 6 P 120 A 320 RS 3118-3 RQV 250-1025 PA 657-6
Komb.-Nr. 0 401 846 797

supersedes

company Volvo

engine: TD 121 FE
257 kW

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $2,6-2,7$
($2,55-2,75$) mm (from BDC) RW = $9,0-12,0$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,1+0,1	21,4-21,7	0,5 (0,9)			$2,5 \pm 0,1$ (2,2-2,9)
250	3,3-3,5	1,8-2,3	0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1090	15,2-17,8	-	-	-	ca. 10	100	min. 4,8	200	0,7-0,9
ca. 65	11,1 4,0 1250	1065-1075 1120-1150 0 - 1,0					250 345-405 = 2,0	3,3-3,5	425 660- 945 1025	3,4-3,9 6,4-6,6 7,6

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,9 bar 214,0-217,0 (211,0-220,0)	1065-1075*	LDA 700	0 bar 150,0-154,0 (147,0-157,0)	100	240,0-280,0 =20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2
5.85
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K17

K17

D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 K 6 - 2 -

Test at n = rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel-diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P..RS 3118-1 +RQV..PA 657-6	0,90	0 0,52 0,17	12,1-12,2 9,1-9,2 11,9-12,0 9,2-9,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 K 7

1. Edition

En

PE 6 P 120 A 320 RS 3118-4 RQV 250-900 PA 657-7
Komb.-Nr. 0 401 846 798

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 0 67

supersedes -

company: Volvo

engine: TD 121 FF
272 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\overset{2,6-2,7}{(2,55-2,75)}$ mm (from BDC) $\overset{RW}{= 9,0-12,0}$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,3+0,1	23,9-24,2	0,5(0,9)			2,5 \pm 0,1 (2,2-2,9)
250	3,3-3,5	1,8-2,3	0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	980	15,2-17,8	-	-	-	ca. 7	100	min. 4,8	250	1,2-1,3
ca. 59	12,3 4,0 1150	940-950 1015-1045 0 - 1,0					250 280-340 = 2,0	3,3-3,5	430 700 940	3,5-3,9 6,4-6,6 7,7-7,9

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,9 bar 239,0-242,0 (236,0-245,0)	940-950 *	LDA 700	0 bar 150,0-154,0 (147,0-157,0)	100	240,0-280,0 =20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

K19

K19

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

VOL 12,0 K 7 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
PE 6 P..RS 3118-4 + RQV..PA 657-7	0,90	0 0,74 0,17	13,3-13,4 9,1-9,2 13,1-13,2 9,2-9,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 K 8

1. Edition

En

PE 6 P 120 A 320 RS 3118-4 RQV 250-1025 PA 657-8
Komb.-Nr. 0 401 846 799

supersedes
company Volvo

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

engine: TD 121 FG
280 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,6-2,7}{(2,55-2,75)}$ mm (from BDC) RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,3+0,1	23,9-24,2	0,5 (0,9)			2,5 \pm 0,1
250	3,3-3,5	1,8-2,3	0,5 (0,7)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1090	15,2-17,8	-	-	-	ca. 10	100	min. 4,8	200	0,7-0,9
ca. 65	12,3 4,0 1250	1065-1075 1130-1160 0 - 1,0					250	3,3-3,5	425	3,4-3,9
							345-405	= 2,0	660	6,4-6,6
									945	
									1025	7,6

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b ④a	Fuel delivery characteristics high idle speed ⑤b ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 700	0,9 bar 239,0-242,0 (236,0-245,0)	1065-1075 *	LDA 700	0 bar 150-154,0 (147,0-157,0)	100	240,0-280,0 =20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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K21
K21

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

VOL 12,0 K 8 - 2 -

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6P..RS 3118-4 +RQV.. PA 657-8	0,90	0 0,74 0,17	13,3-13,4 9,1-9,2 13,1-13,2 9,2-9,4

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 SSC 21,0 a

1. Edition

En

PE 12 P 100 A 520 RS 3120

RQV 300-1250 PA 629

Komb.-Nr. 0 401 840 717

supersedes

compa SSC M

engine V 12.520 ANS 1

295 kW

1- 8- 5-10- 3 - 7 - 6 - 11- 2 - 9 - 4 - 12

0-15-60-75-120-135-180-195-240-255-300-315 $\pm 0,5^\circ (\pm 0,75^\circ)$

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,8-2,9} (2,75-2,95) mm (from BDC) RW=9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,5+0,1	10,5-10,7	0,35(0,6)			
300	8,4-8,6	1,3-1,7	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1310	15,2-17,8	-	-	-	ca. 17	100 300	min. 10,0 8,4-8,6	300 950 1250	1,3-1,4 5,4-5,6 7,8-8,0
ca. 65	1,5 4,0 1550	1290-1300 1390-1420 0-1,0				350-460 (3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	105,6-107,0 (103,0-109,0)	1290-1300*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 RVI 14,9 e

1. Edition

En

PES 8 P 120 A 320 RS 3124 RQ 750 PA 596
Komb.-Nr. 0 402 048 701
1-8-4-2-7-3-6-5 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$
Calibrating nozzle-and-holder assembly 0 688 901 019
Test-pressure line 1 680 750 067

supersedes

company RVI

engine: MIVS (R) 083530
320 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$
($2,75-2,95$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,4+0,1	26,7-26,9	0,5(0,9)			
250	4,2-4,4	1,5-2,1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider FRG check		Full-load speed regulation				Idle speed regulation				Torque control	
		① Setting point		④ Test specifications		⑤ Setting point		⑤ Test specifications		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
-	-	-	-	10,4 4,0 900	750-755 776-789 0-1,0	-	-	-	-	-	-

Torque-control travel

on flyweight assembly dimension a = mm

Speed regulation: At $750-755 \text{ min}^{-1}$

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/ mm 7
700	267,0-269,0 (264,0-272,0)	-		-	-	-	-

Checking values in brackets

5.85

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 RAB 12,0 a

1. Edition

En

PE 6 P 120 A 721 RS 3125-1 RQ 250/1100 PA 704

Komb.-Nr. 0 401 856 704

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company RABA

D 12 U

engine: 176 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,5-3,6) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	9,7+0,1	15,6-15,8	0,5(0,9)			
250	5,9-6,1	1,7-2,3	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PPG check ①		Full-load speed regulation Setting point ④				Idle speed regulation Setting point ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	8,7 4,0 1350	1145-1160 205-1235 0-1,0	250	6,0	100 250	min.7,5 5,9-6,1	1100 700	9,7-9,8 9,7-9,9
VH max. 46°											

Torque-control travel on flyweight assembly dimension a = 0 mm

Speed regulation: At 1145-1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1100	156,0-158,0 (153,0-161,0)	-	-	-	100	190,0-220,0 (185,0-224,0)

Checking values in brackets

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05.85

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BAO 21,2 b

1. Edition

En

8 P 130 A 520/4 RS 3126 RQV 400-750 PA 618-1

Komb.-Nr. 0 401 848 758

1-2-4-5-6-3-7-8 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

Calibrating nozzle-and-holder assembly 1 688 901 019

Test-pressure line 1 680 750 067

supersedes

company Boudouin

engine: 8 P 15

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $2,8-2,9$
 $(2,75-2,95)$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	9,3+0,1	19,2-19,5	0,6(1,0)			
400	4,9-5,1	2,3-2,9	1,0(1,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	8,3 4,0 900	750-755 770-780 0-1,0	-	-	-	ca. 22	100 400	min.6,5 4,9-5,1	400 475 600 750	0,9-1,1 1,9-2,1 1,9-2,1 5,5

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed limitation intermediate speed 4a		Fuel delivery characteristics high idle speed 5b		Starting fuel delivery Idle switching point 6		Torque-control travel Control rod travel mm 5	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
700	192,0-195,0 (188,5-198,5)	750-755*		-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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L2

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BAO 31,8 b 1

1. Edition

En

PE 12 P 130 A 120 RS 3127 RQV 400-750 PA 632

Komb.-Nr. 0 401 830 707

1-12- 9- 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6

0-45-60-105-120-165-180-225-240-285-300-345 $\pm 5^\circ$ ($\pm 0,75^\circ$)

Calibrating nozzle-and-holder assembly 1 688 901 019

Test-pressure line 1 680 750 067

supersedes

company Boudouin

12 P 15

engine:

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$
($2,75-2,95$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0+0,1	30,7-31,0	0,6(1,0)			
400	4,4-4,6	2,1-2,7	1,0(1,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 25	11,0 4,0 900	750-755 776-789 0-1,0	-	-	-	ca. 6	100 400	min.6,0 4,4-4,6	-	-
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5) Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
700	307,0-310,0 (303,5-313,5)	750-755*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 SSC 21,0 b

1. Edition

En

PE 12 P 120 A 520 RS 3128 RQV 300-1250 PA 639-1

Komb.-Nr. 0 401 840 723

1- 8- 5-10- 3 - 7 - 6 - 11- 2 - 9 - 4 - 12

0-15-60-75-120-135-180-195-240-255-300-315 $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

Values only apply to test nozzle-and-holder assembly

1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes

company SSCM

engine: V 12.520 S 25
625 kW

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$ mm (from BDC) $9,0-12,0$ mm
(2,75-2,95)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1250	13,3+0,1	19,8-20,2	0,5 (0,9)			
300	7,9-8,1	2,0-2,6	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1305	15,2-17,8	-	-	-	ca. 17	100	min. 9,5	300	1,3-1,5
ca. 63	12,3	1290-1300					300	7,9-8,1	1000	5,7-6,0
	4,0	1415-1445							1250	7,8-8,0
	1550	0-1,0				350-450				
						③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery: Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1250	198,0-202,0 (195,0-205,0)	1290-1300*	-	-	100	230,0-250,0 (226,0-254,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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L4

L4

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 SSC 21,0 b 1

1. Edition

En

PE 12 P 120 A 520 RS 3128 RQV 400-750 PA 708

Komb.-Nr. 0 401 840 721

1- 8- 5-10- 3 - 7 - 6 - 11- 2 - 9 - 4 - 12

0-15-60-75-120-135-180-195-240-255-300-315 $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

Calibrating nozzle-and-holder assembly 0 688 901 019

Test-pressure line

1 680 750 067

supersedes

company SSCM

engine V 12.520 S 25

441 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,8-2,9$
($2,75-2,95$) mm (from BDC) $RW=9,0-12,0$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	14,3+0,1	22,9-23,1	0,5(0,9)			
400	6,9-7,1	2,0-2,6	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
-	-	-	-	13,3 4,0 900	750-755 780-793 0-1,0	400	7,0	100 400	min.8,5 6,9-7,1	-	-

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

750-755 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
700	229,0-231,0 (226,0-234,0)	-	-	-	-	100	170,0-190,0 (166,0-194,0)

Checking values in brackets

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L5

L5

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BAO 15,9 c

1. Edition

En

PES 6 P 130 A 320 RS 3133 RQV 350-900 PA 618
Komb.-Nr. 0 402 046 753

supersedes
Boudouin
company
6 P 15 - SRCE
engine: 368 kW

Calibrating nozzle-and-holder assembly 0 681 443 022
Test-pressure line 1 680 750 060

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,8-2,9}
(2,75-2,95) mm (from 8DC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	11,7+0,1	32,8-33,2	0,6 (1,05)			
350	3,9-4,1	2,0-2,6	0,95(1,3)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	940	15,2-17,8				ca. 22	100	min. 5,5	325	1,1-1,4
ca. 60	10,7	940-950					350	3,9-4,1	500	3,1-3,8
	4,0	1000-1030							800	6,5-6,9
	1150	0-1,0				350-450			900	8,0
						③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed ②b limitation intermediate speed 4a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤ travel Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
900	328,0-332,0 (324,0-336,0)	940-950*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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L6

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 12,0 f

1. Edition

En

PES 6 P 120 A 320 RS 3139 RQV 275-950 PA 728
Komb.-Nr. 0 402 046 756
Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes
RVI
company
MIDR 063540
engine 259 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Port closing mark 9° after
port closing cylinder 1

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (3,45-3,65) mm (from BDC) RW = 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
950	13,0+0,1	24,1 - 24,3	0,5(0,9)			
275	5,4-5,6	2,0 - 2,6	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1140	5,2-17,8	-	-	-	ca. 12	200	min. 7,0	250	1,0-1,2
ca. 62	12,0	015-1025					275	5,4-5,6	450	3,3-3,8
	4,0	115-1185							800	5,8-6,0
	1250	0 - 1,0				295-400 (3a)			950	6,9

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 950	1,0 bar 241,0-243,0 (238,0-246,0)	1015 - 1025*	LDA 600	1,0 bar 246,0-252,0 243,0-255,0	100	140,0-160,0 (136,0-164,0)	-	-
			LDA 500	0 bar 111,0-113,0 (108,0-116,0)	275	20,0-26,0 (17,0-29,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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L7

L7

D. Adjustment Test for Manifold Pressure Compensator

RVI 12,0 f

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
PES 6 P...RS 3139 + RQV...PA 728	1,0	0 0,60 0,20	13,0 - 13,1 9,2 - 9,3 12,3 - 12,4 9,9 - 10,5

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 12,0 f 1

1. Edition

En

PES 6 P 120 A 320 RS 3139
Komb.-Nr. 0 402 046 758

RQV 275-950 PA 728-1

supersedes _

company: RVI

engine: MIDR 063540
243 kW

Values only apply to test nozzle-and-holder assembly
1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Port closing mark 9.0° after
port closing cylinder 1

A. Fuel Injection Pump Settings

Port closing at prestroke

3.5-3.6
(3.45-3.65)

mm (from BDC), RW = 9.0-12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
950	12.5+0.1	22.9-23.1	0.5(0.9)			
275	5.4-5.6	2.0-2.6				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1140	15.2-17.8	-	-	-	ca. 12	200	min. 7.0	250	1.0-1.2
ca. 62	11.5 4.0 1250	1015-1025 1155-1185 0 - 1.0				300-400	275	5.4-5.6	450 800 950	3.3-3.8 5.8-6.0 6.9

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 950	1.0 bar 229.0-231.0 (226.0-234.0)	1015-1025 *	LDA 600	1.0 bar 231.0-237.0 (228.0-240.0)	100	140.0-160.0 (136.0-164.0)	-	-
			LDA 500	0 bar 111.0-113.0 (108.0-116.0)	275	20.0-26.0 (17.0-29.0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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L9

L9

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure increasing

RVI 12,0 ± 1 - 2 -

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 P .. RS 3139 + RQV .. PA 728-1	1,0	0 0,50 0,20	12,5-12,6 9,3-9,4 11,7-11,8 9,8-10,4

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 UNI 9,5 a

1. Edition

En

PES 6 P 110 A 720 RS 3140

RQV 275-1100 PA 501-2

Komb.-Nr. 0 402 046 757

supersedes

 IVECO-UNIC
 company 8460.21.102
 engine 192 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke ^{3,2-3,3}
 (3,15-3,35) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,5+0,1	14,6-14,9	0,4(0,75)			
275	6,7-6,9	2,2-2,7	0,45(0,75)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1160	15,2-17,8	-	-	-	ca. 14	100 275	min. 8,3 6,7-6,9	250 400 850	1,0-1,2 2,7-3,0 5,5-5,7
ca. 64	10,5 4,0 1350	1140-1150 1215-1245 0-1,0				280-375			1100	7,7-7,9

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1100	0,7 bar 146,0-149,0 (143,5-151,5)	1140-1150*	LDA 500	0 bar 131,0-134,0 (128,5-136,5)	100	170,0-190,0 (166,0-194,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

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05.85

L11

L11

D. Adjustment Test for Manifold Pressure Compensator

UNI 9,5 a

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
PES 6 P..RS 3140 + RQV..PA 501-2	0,70	0 0,265	11,5-11,6 10,8-10,9 11,2-11,3

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 14,6n

4. Edition

En

PE 8 P 110 A 320 LS 3802 RQ 750 PA 374 R
Komb.-Nr. 0 401 848 737
1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$
Note VDT - I - 401/102

supersedes 9.83

company: Daimler-Benz

engine: OM 420
154 kW (209 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC) cyl. 8; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery mit RSD (1) cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery ohne RSD (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,9+0,1	14,2-14,4	0,4(0,8)	13,9+0,1	14,2-14,4	
300	8,3-8,4	1,3- 1,9	0,4(0,7)	8,3-8,4	1,3- 1,9	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		rev/min 6		Control rod travel mm 8		rev/min 9		Control rod travel mm 12	
-	-	-	-	12,9 6,1	750-755 783-796	-	-	-	-	-	-

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation: At 750-755 min⁻¹

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		cm ³ /1000 strokes/mm 7	Control rod travel mm
(1 u. 2) 700	142,0-144,0 (139,0-147,0)	-	-	-	-	(1) 100	130,0-150,0
						(2) 100	140,0-160,0 (136,0-164,0)

Checking values in brackets

5.85

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Testoil-ISO 4113

L13

L13

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MB 14,6 a 1

3. Edition

En

PE 8 P 110 A 320 LS 3802 RQ 300/1150 PA 437-3

Komb.-Nr. 0 401 848 755

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

supersedes 5.84

company: Daimler-Benz

engine: OM 422

184 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $4,0 - 4,1$
 $(3,95 - 4,15)$ mm (from BDC) cyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,0+0,1	11,3-11,5	0,4(0,8)			
300	8,5-8,7	1,4-2,0	0,4(0,7)			
600	-	c, Sp. 4 u.5	0,6(0,9)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10 rev/min 9		Torque control rev/min 11	
	Control rod travel mm 2		Control rod travel mm 4				Control rod travel mm 8		Control rod travel mm 10		Control rod travel mm 12
650	13,2-14,0	650	13,6	10,0 4,0 1350	1195-1210 1260-1290 0-1,5	300	8,1	100 300 400-440 = 2,0	min.8,5 7,0-7,2	1150 600	11,0-11,1 11,2-11,4

Torque-control travel
on flyweight assembly dimension a = 0,2 mmSpeed regulation: At 1195-1210 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7
1150	113,0-115,0 (110,5-117,5)	600		600	92,0-96,0 (89,0-99,0)	100	130,0-150,0 (126,0-154,0)

Checking values in brackets

5.85

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Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6c

6. Edition

En

PE 8 P 110 A 320 LS 3802

RQV 300-1150 PA 524-2

supersede 9.83

Komb.-Nr. 0 401 848 712

RQV 300-1150 PA 524-3

company: Daimler-Benz

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0,5^{\circ}$ ($\pm 0,75^{\circ}$)

engine: OM 422

206 kW (280 PS)

Note VDT - I - 401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $4,0 - 4,1$ mm (from BDC) Zyl. 8; RW = 9,0-12,0 mm
(3,95-4,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery * cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery ** cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,3+0,1	12,2 - 12,4	0,4(0,8)	11,7+0,1	13,3-13,5	
300	8,1-8,3	1,3 - 1,9	0,4(0,7)	7,9-8,1	1,5- 2,1	
600	-	C, Sp. 4 u. 5	0,6(0,9)	-	C, Sp. 4 u. 5	
* with return throttle (1)				** without return throttle (2)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1150	15,2-17,8	-	-	-	ca. 21	100	min.10,1	250	1,0-1,2
ca. 66	11,3 4,0	1190-1200 1235-1265				330-465	300	8,1-8,3	550 850 1150	3,4-3,7 5,0-5,3 7,7

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b ④a	Fuel delivery characteristics high idle speed ⑤a ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
(1) 1150	122,0-124,0 (119,0-127,0)	1190-1200*	600	114,0-118,0 (111,0-121,0)	100	130,0-150,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

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B. Governor Settings

MB 14,6c

- 2 -

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150	15,2-17,8	-	-	-	ca.21	100	min.10,1	250	1,0-1,2
ca. 66	10,7 4,0	1190-1200 1235-1265				330-465 (3a)	300	8,4-8,6	550 850 1150	3,4-3,7 5,0-5,3 7,7

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
(2) 1150	132,5-134,5 (130,0-137,0)	1190-1200*	600	110,5-114,5 (107,5-117,5)	100	130,0-150,0 (126,0-154,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

1

3a

2b

4a

5a

6

5

1

3a

2b

4a

5a

6

5

1

3a

2b

4a

5a

6

5

1

3a

2b

4a

5a

6

5

1

3a

2b

4a

5a

6

5

1

3a

2b

4a

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3a

2b

4a

5a

6

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6c1

3. Edition

En

PE 8 P 110 A 320 LS 3802-1 RQV 300-1150 PA 524-9

Komb.-Nr. 0 401 848 752

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je 45° ±0,5° (±0,75°)

Note VDT - I - 401/102

supersedes 2.83

company Daimler-Benz

engine OM 422

206 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $4,0 - 4,1$ mm (from BDC) Zyl. 8: RW = 9,0-12,0 mm
(3,95-4,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery * cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery ** cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,3+0,1	13,1-13,3	0,4(0,75)	12,3+0,1	13,1-13,3	
300	8,0-8,2	1,5- 2,1	0,4 (0,75)	8,0-8,2	1,5-2,1	
600	-	C, Sp. 4 u. 5	0,6 (0,9)	-	C, Sp. 4 u.5	
* with return throttle (1)				** without return throttle (2)		

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed				Intermediate rated speed				Lower rated speed				Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel	①a	Degree of deflection of control lever	rev/min	Control rod travel	④	Degree of deflection of control lever	rev/min	Control rod travel	③	rev/min	mm
1	2	3	②a	4	5	6		7	8	9		10	11
max.	1150	15,2-17,8		-	-	-		ca. 21	100	min. 9,7		250	1,0-1,2
ca. 66	11,3 4,0	1190-1200 1235-1265						330-465	300	8,0-8,2		550 850 1150	3,4-3,7 4,3-5,3 7,6
								③a					

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b	Starting fuel delivery idle switching point ⑥	Torque-control travel ⑤
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	rev/min
1	2	3	4	6	8
1150 (1)	131,0-133,0 (128,5- 135,5)	1190-1200*	600	100	-
			110,0-114,0 (107,0-117,0)	130,0-150,0 (126,0-154,0)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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5.85

B. Governor Settings

MB 14,6 c 1

- 2 -

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150	15,2-17,8	-	-	-	ca. 21	100	min.9,7	250	1,0-1,2
ca. 66	11,3 4,0	1190-1200 1235-1265					300	8,0-8,2	550 850 1150	3.4-3,7 4,9-5,3 7,6
						330-465 (3a)				

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point	Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	9
(2) 1150	131,0-133,0 (128,5-135,5)	1190-1200 *	600	112,0-116,0 (109,0-119,0)	100	130,0-150,0 (126,0-154,0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point	Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	9

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 a 3

1. Edition

En

PE 8 P 110 A 320 LS 3802-10 RQV 300-1150 PA 486-3
Komb.-Nr. 0 401 848 756

supersedes

company: Daimler-Benz

engine: OM 422

184 kW

Testoil-ISO 4113

1-8-7-2-6-3-5-4 je 45 ° ± 0,5 ° (± 0,75 °)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{4,0-4,1}
(3,95-4,15) mm (from BDC) Zyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,0+0,1	11,3-11,5	0,4 (0,8)			
300	8,4-8,6	1,4-2,0	0,4 (0,7)			
600	-	C, Sp. 4 u. 5	0,6 (0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1190	15,2-17,8	-	-	-	ca. 22	100	min. 9,7	300	1,6-1,8
ca. 54	10,0	1190-1200					300	8,0-8,2	800	5,8-6,2
	4,0	1230-1260					410-480	= 2,0	1200	8,2-8,4
	1400	0-1,0							1260	10,0

Torque control travel a = 0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1150	113,0-115,0 (110,5-117,5)	1190-1200 *	600	92,0-96,0 (89,0-99,0)	100	140,0-160,0 (136,0-164,0)	1150	11,0+0
							600	11,2+0

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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①

Test Specifications

Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 c 2

1. Edition

En

PE 8 P 110 A 320 LS 3802-10 RQV 300-1150 PA 524-2
Komb.-Nr. 0 401 848 712

1-8-7-2-5-3-5-4 je 45 ° ± 0,5 ° (± 0,75 °)

supersedes

company Daimler-Benz

engine OM 422

206 kW

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 4,0-4,1 \\ (3,95-4,15) \end{matrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,7+0,1	13,4-13,6	0,4 (0,8)			
300	7,9-8,1	1,5-2,1	0,4 (0,7)			
600	-	C, Sp. 4 u. 5	0,6 (0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1190	15,2-17,8	-	-	-	ca. 22	100	min. 9,6	300	1,6-1,8
ca. 55	10,7 4,0	1190-1200 1240-1270					300	7,9-8,1	800	5,8-6,2
							410-470 = 2,0		1200	8,2-8,4
									1260	10,0

Torque control travel * = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	133,5-135,5 (131,0-138,0)	1190-1200	600	110,5-114,5 (107,5-117,5)	100	130,0-150,0 (126,0-154,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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L20

L20

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 17,2 b 3

1. Edition

En

PE 8 P 120 A 920/5 LS 3804 RQV 300-1200 PA 357 R

Komb.-Nr. 0 401 848 735

1-8-4-3-6-5-7-2 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes

company: Fiat

engine: 8280.02.183

257 kW

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $3,5-3,6$ mm (from BDC) RW = $9,0-12,0$ mm
(3,45-3,65)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	9,3-9,4	14,9-15,1	0,5 (0,9)			$2,5 \pm 0,1$
300	5,5-5,7	2,8-3,4	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1200	15,2-17,8	-	-	-	ca. 12	100	min. 7,5	250	0,8-1,1
ca. 59	8,3	1240-1250					300	5,5-5,7	450	2,8-3,3
	4,0	1305-1335							850	5,5-5,8
	1450	0 - 1,0				330-430			1200	8,3
						③a				

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1200	149,0-151,0 (146,0-154,0)	1240-1250 *	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 17,2 b 2

En

1. Edition

PE 8 P 120 A 920/5 LS 3804 Z RQV 300-1050 PA 552

Komb.-Nr. 0 401 848 722

1 - 8 - 4 - 3 - 6 - 5 - 7 - 2 je $45^\circ \pm 0,5^\circ$ ($\pm 0,75^\circ$)

Values only apply to test nozzle-and-holder
assembly 1 688 901 019 and fuel-injection test
tubing 1 680 750 067

supersedes

company Fiat

engine 8285.22.002

243 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{3,5-3,6}
(3,45-3,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	11,1+0,1	18,1 - 18,3	0,5(0,9)			2,5 \pm 0,1
300	5,9-6,1	2,4 - 3,0	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1050	15,2-17,8	-	-	-	ca. 11	100	min. 7,5	275	1,0-1,3
ca. 64	10,1 4,0 1350	1090-1100 1180-1210 0 - 1,0				310-410	300	5,9-6,1	450 800 1050	3,5-4,1 6,1-6,3 8,2

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed ②b limitation intermediate speed rev/min ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b rev/min cm ³ /1000 strokes		Starting fuel delivery Idle switching point ⑥ rev/min cm ³ /1000 strokes		Torque-control ⑤ travel Control rod travel mm rev/min 9	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
LDA 1050	0,7 bar 181,0-183,0 (178,0-186,0)	1090-1100 *	LDA 1050	0 bar 135,0-137,0 (132,0-140,0)	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.85

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Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

FIA 17,2 b 2

- 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 8 P..LS 3804 Z +RQV..PA 552	0,70	0	11,1 - 11,2
		0,29	8,5 - 8,6
		0,25	10,2 - 10,3
			9,0 - 9,3

Notes

(1) when n = rev/min and gauge pressure bar (= maximum full-load control rod travel)